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ORIGINAL ARTICLES.

TUMORS OF THE OPTIC NERVE, WITH REPORT OF TWO ORIGINAL CASES.

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BY S. C. AYRES, M.D.,
OF CINCINNATI, O.

Diseases of the orbit present a very interesting group. They are very numerous, considering the size of the orbital cavity and its somewhat isolated location. Here we find tumors malignant and non-malignant originating in the orbit itself, in the optic nerve, in the globe, and afterwards invading the orbital cavity, as well as growths from the nasal fossæ and the cerebrum, which encroach on it from different directions. Each one of these subjects might well command our earnest attention, but I propose to mention one class only, tumors of the optic nerve. They are comparatively rare, there being at present less than seventy cases on record. With your permission I will give a hasty résumé of the literature at my command on the subject, and then give in detail the two cases which have come under my observation.

In Vol. xxv, Graefe's Archiv, Dr. Willemer, of Göttingen, reports twenty-two cases which had up to this time been reported. These include nine cases already reported in Vol. xix by Dr. Goldzieher, of Heidelberg, three of which he had himself operated on. He adds as an appendix five more cases, making twenty-seven in all. He gives a full and concise description of them macroscopically and microscopically, and an exhaustive statement of the various questions relating to growth, development, pain, probability of return, etc. It is a very comprehensive paper, and will well repay any one interested to read it carefully. Beginning with the case reported by Heymann in 1842, he gives in detail all the cases by Rothmund, Graefe, Sichel, Jr., Horner, Brailey, Goldzieher, Gruening, Leber, Alt, Mauthner, Holmes, Forster, Laquer and others, and gives in detail two cases observed by himself.

Dr. A. Vossius, of Königsberg, in Graefe's Archiv, Vol. xxviii, part iii, adds a contribution to the knowledge of the true optic nerve tumors, *i. e.*, those developed within the external sheath. He says in substance as follows:

Among the twenty-seven real optic nerve tumors described by Willemer, A. f. O., Bd. xxv, 1, the sarcomata play the leading rôle. These were partly fibro, partly glio-sarcomata, and most of them were combination tumors mixed with myxomatous tissue. Fourteen cases, or 52 per cent., were of sarcomatous character; six cases, or 23 per cent., were myxomatous; five cases, or 15 per cent., were fibromatous; one case was described as a scirrhus carcinoma, and one peculiar case was neuroma verum. The classification of all these cases has been very arbitrary, especially those described as myxomata and fibromata.

Imperfect methods of examination were the reason for inexact classification of tumors which were observed in past years. Pure myxoma and fibroma may be considered a rarity.

The size and consistency of the tumors vary; the more myxomatous tissue they contain, the softer they are. The external sheath surrounded the tumor in its entire extent, with but slight change in its structure; the external sheath and the tissue of the intervaginal space were chiefly involved. The optic nerve itself showed a variety of conditions; it lay either unchanged in the middle, or more or less eccentric in the tumor substance. On the other hand it was recognizable only at its commencement near the eyeball, while near the middle of its course it was completely lost. Usually only one eye was affected; in rare cases an extension of the tumor involved the intracranial part of the nerve as far as the chiasma. A case of von Graefe's is recorded where both nerves and the chiasma were almost completely involved in a tumor which extended backwards to the pons.

In a case of Leber's there was found a multiple knotty swelling of the optic nerve in a normal appearing eye, the cause of which was a tumor of the same character in the other eye, for which the first eye was enucleated.

The years of childhood appear to be especially predisposed to the growth of these tumors; as is likewise the case with the development of glio-sarcomata of the retina, it is probable that both these varieties of tumors take their origin during fœtal life. Heredity has never been proven in

the case of these tumors, yet very frequently their discovery soon after birth gives reason to suspect such an origin. Trauma is frequently the cause, both in childhood and in adult years.

The first and constant symptom of true optic nerve tumors is exophthalmos, with slow and painless development. The motions of the eyeball are not affected until late, because the muscles are not involved, and because no attachment takes place between the surfaces of the eyeball and tumor. A second important symptom is an amaurotic condition of the eye. A suppurative keratitis sometimes results from the exophthalmos, and finally a degeneration of the entire eyeball.

A return of the tumor following enucleation has seldom been observed. Five cases are reported of death following soon after enucleation from meningitis, and two cases of death after an interval of several years from propagation into the brain.

The first case reported by Vossius was in a boy 2½ years old. The parents say that a few weeks after birth a peculiar appearance of the left eye was noticed; within a year commencing exophthalmos was noticed. The papilla was very much swollen, of a whitish color, and the vessels very tortuous. The eye and tumor were removed. Microscopic examination proved the growth to be a myxosarcoma, and it was located in the intervaginal space.

His second case was in a boy 8 years old. Exophthalmos is said to have arisen the previous year after an attack of whooping-cough. There was white atrophy of the disc without indication of a previous neuritis. Two years later a firm elastic swelling could be felt below and behind the eyeball. Motion of the eye downward and outward was defective. Antero-posteriorly the tumor measured 42 mm., the greatest height 22 mm., and width 27 mm. The arachnoid sheath was thickened, but the chief part of the tumor arose from the tissue of the intervaginal space. A strip of hæmorrhage existed around the periphery close under the dural sheath. The color of the periphery was a moss-green, while the middle was yellowish and lighter. A longitudinal section of the tumor mass shows an intricate fibrous network with numerous cells and more or less coarse connective tissue; occasional groups of myxomatous masses, among which were strongly colored balls and knotty masses; no nerve fibres.

In Graefe's Archiv., Vol. xxxiv, 1888, Prof. Dr. Schiess-Gemuseus reports a case of total myxosarcoma of the optic nerve removed with retention of the eyeball. It was in the person of a girl 12½ years of age. In childhood her parents noticed that she could not open the right eye quite as wide as the left, but recently it has become larger than its fellow. The ball is also turned downwards and outwards. Vision is reduced to $\frac{1}{17}$ and the optic nerve presents a pronounced choked disc. In September, 1885, three months after her first visit to the clinic, vision had been reduced to $\frac{1}{50}$ and a hard tumor could be felt with the finger between the ball and the upper edge of the orbit. He decided to try to remove the tumor and save the globe. The operation was a brilliant success and the girl still retains the eye, and so far there has been no reproduction of the tumor. The tumor has the shape of a rounded spindle, is completely surrounded by a dense connective tissue capsule, which is merely the external membrane of the optic nerve sheath. It was sausage-shaped, surrounded the nerve and pressed upon the eyeball, and was cut off close to the eyeball. At the rear end it pressed close upon the optic foramen; the length of the nerve enclosed within the tumor was 37 mm.; the transverse diameter close to the ball was 13 mm.; its greatest diameter was 20 mm. The surface of the tumor was covered with numerous smooth elevations and depressions; the covering membrane was easily removable from the substance of the tumor. A bile-like substance filled the tumor, resembling more a secretion than a tissue. Microscopically the tumor shows a number of circular or rod-shaped nuclei, with here and there some fine free fat cells. The whole seems to be composed of a more or less dense fibrous mass of uncommonly long, fine, delicate fibres, most of them containing somewhat oblong nuclei, others more round and occasionally quite long, rod-like nuclei; in general, each fibre contained one nucleus. The dural membrane encloses the tumor with an average thickness of $\frac{1}{16}$ mm.; processes extend into the body of the tumor from the dural sheath. The optic nerve fibres are everywhere sharply defined from the fibres of the tumor. The tumor is developed between the inner and the outer nerve sheaths. The thickness of the pial membrane varies from 0.6 to 0.12 mm. The integrity of the optic nerve is remarkably preserved; no trace of fatty degeneration.

Conclusions.—The pathological-anatomical examination shows with certainty that the tumor is not a neuroma, and that the nerve in its pial sheath is nowhere involved, the tumor being developed between the pial and dural membranes. Penetrating all through the fibrous structure of the tumor are very numerous blood-vessels having very thick walls. In many places there are peculiar œdematous spots. The growth of the tumor around the nerve was not everywhere equal in thickness, the nerve lying in some parts of its course against the dural sheath, in others in the middle of the tumor. The tumor has much similarity to those described by Willemer and Vossius as myxosarcomata (A. f. O., Bd. xxv and Bd. xxviii). The great vascularity and the thickness of the vessel walls are very charac-

teristic; the entire tumor must have originated with a slow growth from the fibres of the arachnoid. It is remarkable to find the optic nerve retaining so nearly its normal condition, surrounded as it is intimately by a growth of such size and character. The pial sheath is broken through by the growth of the tumor in only a few places. The macroscopical form is similar to those described by Willemer and Vossius—spindle-form; the contents a soft, oozing mass.

The pathological-anatomical condition explains fully the reason of the varying state of the vision during the development of the tumor. The nerve, surrounded as it was by a soft, very vascular mass, suffered occasional compression, in consequence of which the choked disc was to be seen with the ophthalmoscope.

The present case is especially interesting owing to the preservation of the eyeball. Knapp was the first who removed a similar tumor without sacrificing the globe, but the eyeball was lost later through suppurative keratitis. Dr. Gruening, however, had a successful case, but the tumor was a small one (size of a hazelnut) and situated close to the eyeball.

Mr. Geo. Lawson, in the Royal London Ophthalmic Hospital Reports for January, 1888, reports a case of tumor of the optic nerve, which he says is the third one which has occurred in his practice.

In the reports of the hospital for August, 1882, is the first case. Here he says that "tumors of the nerve are comparatively rare and may occur in two ways: First, they may be external to the nerve fibres and spring from the dural sheath of the nerve; second, they may grow from within the nerve, being intimately associated with the connective tissue between the nerve fibres and constituting a neuroma." He then reports and illustrates a case where the growth originated from the dural sheath of the nerve. In the same number of the Reports is a case of so called "spurious neuroma" of the optic nerve, reported by Mr. J. W. Hulke. He says "that post-ocular intra-orbital tumors of the optic nerve and of the sheath are of such rare occurrence that the following case appears worthy of permanent record. The extremely slow rate of increase of the proptosis, indicative of correspondingly slow growth of the tumor, and the relative freedom of the movements of the eyeball, together with the normal appearance of the fundus oculi, had inclined me to regard exostosis as the most probable cause of the proptosis, and to reject as improbable a sarcoma or carcinoma of the orbital walls or optic nerve. This, however, proved erroneous."

The case is as follows: Caroline, æt. 19, a thoroughly healthy-looking brunette, was admitted on July 6, 1881, into the Middlesex Hospital. She had extreme proptosis of the right eyeball to the extent that even with a strong effort she could not close the eyelids, and sometimes in the attempt they slipped behind the eyeball. This occasionally happened in the act of winking, and it was so painful to her, and the effect so distressing to those about her, that she shunned society and was rendered more unhappy by this than by the loss of sight. The eyeball moved consensually with the other, and nothing unnatural could be felt within the borders of the orbit by pressure through the eyelids. Vision was reduced to quantitative perception of light. With the ophthalmoscope nothing unnatural was discernable in the optic nerve or retina. The external aspect of the eyeball was perfectly natural.

History.—An elder sister who accompanied her said that the unnatural prominence of the eyeball began to be noticed in her sixth year, and that its increase has been very gradual and unattended with pain, but with progressive loss of sight.

The eyeball and the tumor were therefore removed together, the optic nerve being severed close to the foramen opticum. The tumor was firm, of a spherical outline, in size about one-third less than that of the eyeball, from which it was separated by a portion of seemingly healthy optic nerve somewhat more than half an inch long. The extremely slow growth of the tumor (dating its beginning from the time when the protrusion of the eyeball was first noticed) is a remarkable circumstance, and one well calculated to lead to a mistake in diagnosis.

Structure.—The short piece of nerve that intervenes between the eyeball and the tumor is folded on the latter in such a way that the two bodies lie almost in apposition. Except for some thickening the dural sheath passes unchanged over the mass, but the loosely arranged fibres of the intervaginal space are enormously increased in the neighborhood of the entrance of the nerve into its front part. They also bear far more nuclei than normal. Towards the center of the tumor they gradually become replaced by an imperfectly fibrillated tissue containing numerous cell elements, of which the majority are small, perhaps .005 mm. in diameter. All gradations of size are found up to the largest, which are .026 mm. in diameter, oblong, and perhaps slightly drawn out at the ends, with several dot-like nuclei and numerous granules. The pial sheath and nerve fibres lose themselves in approaching the center of the tumor. The new growth appears to be a sarcoma taking its rise in the loose tissue of the intervaginal space, most probably from the nucleated cells found upon its fibres.

In the journal referred to above Mr. Lawson says: "Tumors of the optic nerve behind the eye, but within the orbit, are rare. In my own practice this is only the third case I have had. The first case was recorded in the Ophthalmic Hospital Reports, Vol. x, p. 296; the second in the fifth edition of my 'Manual of Diseases and

Injuries of the Eye,' p. 238; and the third is the case I have now to relate. In each of these the eye was blind.

"The symptoms in the following case were sufficiently pronounced to enable me to suggest that the growth in the orbit was probably a tumor of the optic nerve behind the eye. They were: A protrusion of the eye downwards and forwards, but the proptosis of only a moderate degree; steady loss of sight, first noticed with the commencement of the proptosis and terminating in complete blindness.

"The prominent symptoms which seem to indicate tumor connected with the optic nerve are proptosis, with early impairment of vision. The loss of sight in orbital tumors not connected with the optic nerve is caused either by the stretching of the optic nerve from the proptosis, or by the pressure of the growth on the nerve. There is seldom complete blindness unless the growth by its size has destroyed the functions of the optic nerve either by pressure or stretching. In this patient the defect of sight was an early symptom, which progressed to blindness before there was a sufficient stretching of the optic nerve to account for it, or a large enough growth in the orbit to produce it by pressure. Lastly, with the ophthalmoscope there was seen white atrophy of the optic nerve, with enlarged retinal veins, evidently due to the pressure of a tumor on the nerve, and, from its comparatively small size, probably directly connected with it.

"Edward R., æt. 12, admitted July 25, 1887.

"*History.*—Two months ago his left eye was first noticed to be 'larger' than his right; since that time it has gradually increased and the sight has gradually failed in it. He has not had any pain in the eye, but headache, frontal and behind the ear on his left side at times.

"*State on Admission.*—Left eye proptosed and misplaced forwards and downwards; movements of eyeball good. At the upper and inner part of the orbit is felt a hard mass extending backwards in close contact to the roof of the orbit. There is no nasal obstruction or deafness, no posterior palatine growth, and no glandular enlargement. He has no perception of light with the left eye; the pupil is inactive to light. By ophthalmoscopic examination the disc is seen to be white and the margin blurred, the veins big and tortuous and obliterated in places near the margin of the disc. T. n. The right eye is normal.

"He introduced a speculum between the lids and excised the eye with the tumor around the nerve *en masse*. Behind the globe, which upon examination presented nothing unusual, was a tumor surrounding the optic nerve and extending backwards from the sclerotic a distance of 23 mm. In its widest part its diameter was 18.5 mm. Irregularly pear-shaped, with the smaller end forwards and with a lobulated surface, it was entirely enclosed in the optic nerve sheath. At the posterior limit of the growth, where the nerve emerged, it and the sheath were in contact, but the nerve was somewhat thickened. The tumor was fairly firm to the touch, and near its anterior end were felt one or two small cysts beneath the capsule.

"*Microscopical Examination.*—The new growth is a sarcoma of loose connective tissue type, which in parts is undergoing myxomatous degeneration. In those parts which are apparently free from this change the stroma is finely fibrous and forms in places a delicate reticulum resembling that met with in lympho-sarcoma, with this difference, that there are no cells in the meshes. Throughout the growth the cells are very loosely arranged and there are no clumps of cells, such as are usually met with in the true myxo-sarcomata. The cells are round and oval, but the former largely predominate. No spindles were found. There are numerous small areas of myxomatous degeneration, but in no section were there found the translucent spherules described in tumors like this one by Vossius, Leber and others. A few vessels in the growth show marked hyaline degeneration of their walls, which are greatly thickened and their lumen almost obliterated; but in none of the sections examined were there any hyaline appendages to the degenerated vessels.

Scattered through the optic nerve are large numbers of cells, which are identical in appearance with the cells of the new growth. The nerve fibres show little if any change, but the trabeculæ are thickened. The pial sheath can be traced unbroken over the thickened nerve, but it is being invaded by the tumor cells. The dural sheath, which is but loosely attached to the tumor, is not implicated. Though it is impossible to tell with certainty the site of origin of the tumor, it is most probable that it grew from the connective tissue of the inner sheath, or from the loose tissue of the intersheath space."

Wolfheim, in his inaugural dissertation, December, 1887, Königsberg, collects together the cases of tumors of the optic nerve which have up to that time been published (42 cases up to 1884). He adds to them those of which up to this time no mention has been made since 1884. He gives a detailed account of a new case, so that the total number of published cases amount to 61. The sarcomata were the most numerous, amounting to 49.

The new case was as follows: It was in the person of an eight-year-old boy, in whom the left eye had become gradually more prominent. There was pronounced swelling of the papilla. On the temporal half of the papilla, at the junction of some small blood-vessels, lay three small, round hæmorrhages. Digital exploration of the orbit revealed a firm tumor probably connected

with the optic nerve, of an irregular surface, which extended back to the region of the optic nerve. The optic nerve was severed close to the optic foramen and removed with the globe.

The tumor began 7 mm. behind the globe and presented a post-horn shaped outline. The length of the growth was 27.5 mm., its breadth 21 mm., and its height in the middle 24 mm. The growth was covered with a strong capsule, which constituted the immediate continuation of the dural sheath of the optic nerve. When incised it presented a homogeneous appearance. The result of the microscopic examination showed it to be a genuine spindle-celled sarcoma with partial myxomatous degeneration. At the same time it was very vascular and filled not only the sub-dural space, but had extended from the pial sheath into the nerve itself, and apparently had inserted itself in the trabecular, projecting into the trunk of the nerve.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, December 10, 1887, Dr. George E. Frothingham reports two cases of tumor of the optic nerve occurring in young people, one a lad of 7 and the other a girl of 17. In both the eyes were enucleated with the tumors. In one case there was a papillitis, in the other there was not.

In the case of the boy the tumor involved the entire substance of the optic nerve from the foramen to the globe. It was $1\frac{5}{8}$ in. in its long, and $1\frac{1}{16}$ in. in its short diameter. In the other case it was not quite so large, and the ocular end of the nerve was free for about half an inch. Both were round-celled sarcomata. No return to date.

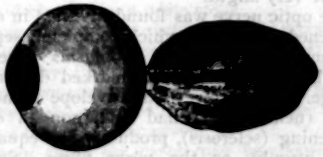
In the *American Journal of Ophthalmology*, Vol. i, 1884, p. 243, Dr. Aub reports a case of myxosarcoma of the optic nerve. It was in the person of a married woman, age not given. The microscopic examination was made by Dr. Alt, of St. Louis. He says it consists chiefly of spindle-shaped and stellated cells. . In many parts of the growth the mucoid substance is accumulated in the form of smaller and larger cysts of irregular and round shape.

I come now to the first of my own cases: J. D., æt. 12, was seen for the first time July 18, 1886. He said the right eye had been amblyopic since last spring. There was no history of trauma and he had not suffered any pain, but had continued in school all the time until impairment of vision and probably diplopia had attracted his attention to the eye. There was a slight exophthalmos and vision was reduced, T. 1. The mediæ were clear. There was well-marked optic neuritis, the disc was swollen and quite prominent, and the vessels upon it obscured. Vision was reduced to the perception of shadows of the hand outwards and downwards. As there was no reason to suggest or recommend an immediate operation, I put him on a course of kali. iod. and ordered him to come back again in a month.

In August his vision was slightly better; he could count fingers at one foot. I saw him again in October, and his vision had improved to counting fingers at five feet. The swelling of the optic disc had subsided considerably, but there were evidences of optic nerve atrophy coming on.

I did not see the patient again until April 5, 1888. At this time there was a marked change in the appearance of the eye. Vision was entirely obliterated and there was atrophy of the optic disc. There was proptosis of the eye, and a tumor or growth of some kind could be felt in the upper and outer portion of the orbit. It felt firm but somewhat elastic. Motility of the eye was unimpaired. April 9th I made the operation, hoping that I might be able to remove the tumor and save the globe. I made a free incision through the conjunctiva parallel with the external rectus muscle, and then another incision close to the cornea at right angles to it, severing the external rectus muscle, leaving a little stump attached to the sclera, in case I should want to unite the cut ends of the muscle. After passing my finger along the tumor and exploring its location and size as well as I could, I became convinced that it would be impossible to save the globe and remove the tumor.

I then proceeded to remove the globe and afterwards the tumor. There were no special difficulties in the case and the globe was severed close to the optic foramen.



Macroscopic Appearance.—The tumor was spindle-shaped, or rather sausage-link shaped. It was quite regular in outline and was enclosed in a thick, firm capsule. Its outer surface presented a wrinkled or corrugated surface. It was 28 mm. in length, and 20 mm. in diameter at the thickest portion. It was quite firm and solid.

Microscopical Examination by Dr. James M. French.— Preparatory to microscopic examination, the specimen was hardened in Müller's fluid and absolute alcohol. Sections were then cut $\frac{1}{100}$ inch in thickness and part of them stained in hæmatoxylin, part in alum-carmine.

On examination the growth was found to be a sarcoma of the small round-celled variety, very vascular and in some parts supported by an abundance of fibrous tissue, but for the most part exhibiting a large amount of mucoid tissue, and consequently belonging to the class designated "myxosarcomata."

The tumor mass completely surrounded the optic nerve, which still remained visible, even to the unaided eye, at a point near the centre of the transverse section. The small round cells which constituted the most striking feature of the growth were of nearly uniform size, measuring from about 3.5 mm. to 5.0 mm., each containing a distinct nucleus and more or less granular protoplasm. The intercellular spaces are filled by a colorless, translucent substance, in some parts amorphous, but in most parts marked by an exceedingly delicate fibrillation. In the more translucent regions were found in considerable numbers the indistinct fusiform and stellate cells with long, delicate prolongations characteristic of mucoid tissue.

Fibrous tissue bands of variable width subdivided the neoplasm into numerous compartments of varying form and size, but never very large. In these the cells rested without definite arrangement. The fibrous tissue is everywhere very vascular. In some places the blood-vessels are of large size with firm muscular walls; in others mere spaces without defined walls. As in all sarcomata, these blood-spaces are abundant in the cellular portion of the tumor, appearing like narrow channels washed through the mass of cellular tissue. Along the course of the blood-vessels, particularly those of comparatively large size, pigment has been deposited, partly as a diffused yellow-brown stain, partly in a granular form. In some places this discoloration is decided, in others but very slight.

The optic nerve was found invested in a much thickened pial sheath which completely separated it from the surrounding neoplasm. The nerve had, however, undergone marked degenerative change. The fibrous tissue envelope of the nerve fibres (neurilemma) had undergone a decided thickening (sclerosis), producing an equally decided atrophy on the nerve fibres. Scattered throughout the substance of the nerve were a large number of amylaceous bodies, some of which were intact and exhibited the characteristic parallel lines, others had been fractured, probably in the preparation of the specimen.

The tumor had for its envelope the external fibrous sheath of the optic nerve. This had, however, undergone decided thickening, and was so loosely attached to the neoplasm that a considerable portion of it was unavoidably detached in the preparation of the specimen for microscopical study. In addition to the increase in thickness of this sheath, there was a very manifest increase in the number and size of the blood-vessels. Numerous pigmentary deposits were also found, and in a few places cyst-like openings. In some portions there were also evidences of the extension of the neoplasm into the meshes of the fibrous tissue; it was nowhere found, however, to have involved the entire thickness of the sheath.

The appearances obtained from a longitudinal section of the growth were not materially different from those just described. The alveolar spaces, if such they could be called, presented a little greater average length, showing that the bands of fibrous tissue forming their walls to a certain extent followed in its course the long axis of the growth.

The fibrous tissue envelope of the neoplasm was found to be continuous at the extremities of the tumor with the dural sheath of the nerve, thus supporting the supposition that the growth originated in the connective tissue of the nerve sheath. There has been no return of tumor up to date.

My second case was in the person of a young lady. Miss Nellie S., æt. 22, a strong, well developed young woman in excellent health, when 8 years old fell while playing on the ice and struck the back of her head. She was insensible for a short time and there was tenderness in the back of the head which continued for three months afterward. About two years later she had an attack of malarial fever; there was some swelling and œdema of the lids, and while testing her vision she discovered that her right eye was nearly blind.

I saw her first in 1880, about seven years after the accident above referred to. At that time there was atrophy of the optic disc and vision was reduced to *nil*. There was a slight prominence of the eye and a slight divergence. There was no pain, and the eye gave her no inconvenience except from loss of vision.

I have seen her from time to time up to the present year, and there has been a gradual increase in the prominence of the eye. There have also been shooting pains occasionally in the orbit and in the right side of the head, which have increased recently. The eye now stands about 7 mm. in advance of its fellow. The motions are perfect in all directions, and it is not possible to detect any tumor by pressing the finger between the walls of the orbit and the globe. The ball cannot be pressed into the orbit.

I made the operation March 9th, 1889. After severing all the muscles, I found that the growth was very firmly attached to the apex of the orbit and it was with some difficulty that I detached it. It came out entirely, leaving the bony wall of the orbit smooth. There was a mild orbital cellulitis following it but it seemed to subside quietly and

she returned home in about ten days. After her return home she seemed to do well for about two weeks when she was attacked with typhoid fever from which she died about six weeks after the operation.

Macroscopical appearance of the tumor: It was triangular, or rather irregularly pyramidal in shape. The base of the pyramid was attached to the inner wall of the orbit. The growth was enclosed in a strong capsule which presented a uniformly smooth surface except inward where there were three small elevations or nodules. It appeared as if the tumor had made an attempt to perforate the capsule at these points. The optic nerve was not involved for a distance of 8 mm. from the globe. The base of the tumor (the portion attached to the bone) measured 25 mm. in length and 14 mm. in breadth. The surface measurement of the tumor on its longest side was 40 mm. and its shortest 20 mm. It measured 20 mm. in thickness. Macroscopically it presented a pinkish grey color and was of homogeneous consistency.

Microscopical examination: The specimen after being thoroughly hardened was first cut transversely at a point near its middle. Ocular examination of the cut surface revealed an almost homogeneous mass: a few linear subdivisions were however visible on close inspection. No evidence of the optic nerve could be discovered. The tumor was enveloped in a thin fibrious capsule which was manifestly continuous with the external sheath of the optic nerve projecting from its extremity.

Microscopic examination showed that the tumor was a myxo-sarcoma, the cellular elements of which were of the small spindle variety. The cells throughout the greater part of the section were closely aggregated with a very little intercellular tissue, and this was for the most part amorphous in character. The growth was however sub-divided into numerous small and very irregular compartments by delicate bands of fibrous tissue. These supported blood vessels of embryonic character. Similar blood-vessels or channels were visible throughout the cellular masses. The growth was not however remarkable for its vascularity. The course of the spindle cells was peculiar and interesting. In some portions of the growth cells were seen which had been cut longitudinally and therefore appeared as perfect spindles, and in other portions, as is usually the case, cells had been cut obliquely or transversely, causing them to appear oval or round.

In one portion of the growth corresponding to the central region of the tumor, there was a peculiar circular or whorled arrangement of the cells. The center of these whorls was found to be the axis cylinder of an optic nerve fibre. These fibres were found so widely separated that the space occupied by the remains of the nerve was more than four times the normal diameter of the optic nerve. The nerve fibres had undergone marked atrophy. Numerous amylaceous bodies were also present in the same region of the tumor. The pial sheath of the optic nerve had been so incorporated with the new formed tissues, or so completely replaced by them as to be indistinguishable.

In the longitudinal sections the appearances were not materially different from those observed in the transverse cut, so far as the neoplasm was concerned. There was abundant corroborative evidence of the persistence of nerve fibres in the region of the growth that has been described. The mucoid tissue seen in the transverse section was even more apparent in the longitudinal, resembling in some parts broad bands of translucent tissue with a few nucleated cells and in some instances surrounding small islands of neoplastic cells.

The external sheath of the growth was found to be continuous with that of the optic nerve and there was no evidence of its having been invaded by the disease.

The two cases I have observed resemble several of those already reported but especially those of Schiess-Gemeseus and Mr. Lawson. In the case of the former however the macroscopic appearance was very unlike that of most if not all of the cases. He says that a bile-like substance filled the tumor, resembling more a secretion than a tissue. In nearly all the cases the tumor was firm and elastic if not quite solid.

I have added to the sixty-one cases reported by Wollheim, six new cases, viz.: one by Mr. Lawson; two by Frothingham; one by Aub, and two from my own practice. All of these but one (that by Aub) occurred in young persons, and in this one the age is not given.

Two of these six cases may be classed with the sarcomata, and four with the myxo-sarcomata. The number reported to date do not furnish sufficient data from which to draw any very definite conclusions as to pathology and prognosis. There has been heretofore a somewhat arbitrary classification of these cases, but the present exhaustive and critical microscopic examinations will place each case where it belongs.

We may say in general that these tumors occur more frequently in the young, that they are very slow of growth (as illustrated by my second case), that they are sometimes congenital as in the case reported by Vossius, and that they may be of traumatic origin.

Microscopically they are sarcomata or myxo-sarcomata. One of the prominent symptoms to aid in differentiating between a tumor of the optic nerve and a sarcoma of the orbit, is the almost unimpaired motility of the ocular muscles in the former.

THE DISABILITIES OF INEBRIETY—AN INQUIRY RESPECTING THE NATURE OF DRUNKENNESS, AND OF ITS RESPONSIBILITIES.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY T. L. WRIGHT, M.D.,
OF BELLEFONTAINE, OHIO.

Confident assertions respecting the nature and responsibilities of the drunken state are unwise, and very often are unjust. As a matter of fact, drunkenness does not always represent the same condition of the human organism. It does not owe its *origin* in different persons to similar causes. Its *progress* is extremely unlike in separate individuals. Its *consequences* are various and dissimilar in fundamental and decisive particulars. Moreover, the causes which incite to drunkenness may become modified, as physical impairments and degenerations are developed within the structure.

One of the leading elements that enters into the nature of drunkenness is paralysis. This disability is not a consequence of intoxication, but is a component part of it. Attention to this fact will furnish the key to an explanation of the wide range of incentives which lure to alcoholic excess. In the human economy the nervous system is paramount. It not only controls the sensibilities and movements of the body, but it has authority over the mental and moral expositions.

But wheresoever sensibility extends—whether in the physical structure, or in the intellectual movements, or in the moral exhibitions, there too, may sometimes be found instability of nervous function, irregularity of nervous coöperation, and asperity of nervous feeling. What can be more effective in blunting the morbid acuteness of neurotic sensibility than paralysis—the partial paralysis of alcohol?

The applicability of the alcoholic impression, therefore—delusive and disappointing as it may prove in the end—embraces every department of human nature.

To illustrate the distinctions which may characterize the qualities of drunkenness, I will note the features of the drunken state as seen in the *casual* drinker; in the *periodic* drunkard; in the *habitual* drunkard; and in the *chronic inebriate*—that is, in drunkenness associated with fixed and unchangeable structural degenerations.

Casual drunkenness is an interesting study, as it unfolds the nature of alcoholic intoxication without its complications. This form of drunkenness is usually fortuitous, and without premeditation; and when the occasion is passed, and the drunken spell is over, the person implicated returns without reluctance to his customary avocations and habits.

In a space of time surprisingly short after partaking of alcohol, there is induced a state of partial paralysis that extends throughout the nervous system. Paralysis is not an offshoot, a complication of drunkenness, but is a part of it.[1] The characteristic phenomena of intoxication are largely due to disqualifications and inaptitudes arising from the presence of partial paralysis. It is obvious that the nervous incapacity resulting from the alcoholic influence extends all the way from slight incompetency of nerve, to absolute unconsciousness—according to the quantity of the poison taken into the system.

A distinction should be recognized between the disqualifications of simple weariness, and those arising from the paralysis of alcohol. The former are physiological, and are never withdrawn from the supervision of the volitional powers; the latter are toxic, and they are removed from the control of the will. However, the disabilities imposed by the alcoholic influence upon the will are not necessarily of direct application; but, being universal in the organism, they aid to more completely overthrow the power of will through injury to the other capacities.

Alcoholic paralysis does not appear to be uniform in the strength of its impression. Occasionally the motor nerve centres seem to be greatly overcome, while the rational faculties may not be correspondingly affected. Again, the reverse may be true—the drinker being rather steady in his muscular movements, while he is helpless in his intellect. The special senses may also show varieties in the extent of their disabilities. Illusions often deceive the sight, while the senses elsewhere are not seriously affected. Common sensation is impaired; and being dull and inactive, the imagination may accept outside suggestions (or, possibly, inward impulses), as to the nature of things—falsely believing that the qualities suggested are manifested in sensation. There is nothing more conducive to deceptive beliefs than anæsthesia. From these, and analogous disabilities, all springing from paralysis, the phenomena of pure drunkenness are evolved and presented to open view.

Drunkenness largely consists of incoherent movements in the great departments of man's nature. If alcohol produced an uniform effect upon all the nervous powers, the result would be *universal defect*, not *unequal defect*. It would be imbecility, not drunkenness. Nevertheless, it does not follow that an equal paralytic *impression* must result in equal paralytic *effect*. The impressibility of the nervous system is unequal and varies in its several departments. Hence sometimes may be seen the spectacle of seeming excitement in certain nerve centres arising, in fact, from the paralysis of other nerve centres; disturbances in

[1] The fact of alcoholic paralysis is supported by such names as Hughes, Crothers, Poole, Mann, Brower, Mason, Parrish, Kerr, Kowalewsky, and others.

the inhibitory centres are very liable to produce such effects. From these considerations it seems probable that an application of some abnormal force, either to exalt or depress the universal nervous system, would produce an *unequal* and *distorted* display of nervous function.

When a person partakes of alcohol for the purpose of hardening his feelings in order to commit crime, he surely is accountable for the criminal act. In this case, the alcohol is taken as auxiliary to carrying out a purpose previously formed. The intent preceded the act of drinking, and it was formed when the mind was sober. The action of alcohol is here that of a subsidiary instrument in the execution of an offense already determined on.

It will be well to inquire before proceeding further, what the principles of the law are respecting the criminal responsibility of inebriates. "The law assumes," says Hon. Clark Bell,[2] "that he who, while sane, puts himself voluntarily into a condition in which he knows he cannot control his actions, must take the consequences of his acts." Another proposition is appended, namely: "and that his intentions may be inferred." In another place the statement is in this form, to wit: "That he who thus voluntarily places himself in such a position, and is sufficiently sane to conceive the perpetration of the crime, must be assumed to have contemplated its perpetration."

The whole force of the legal apothegm turns upon the words: "in which he knows he cannot control his actions." The assumption is that while sober and before drinking the man knows he cannot control his actions when intoxicated, and *therefore* he is rightfully held to accountability for his drunken conduct. The further assumption that he intended to perpetrate crime, from the fact that he did commit it, is based upon the same hypothesis, namely: he *knew* when he partook of alcohol, that he could not control his actions, therefore "he must take the consequences of his acts."

There are those who will claim that these legal assumptions are not based upon thoroughly ascertained facts—that they are entirely too sweeping and comprehensive. That a drunken man is in such a condition that he cannot control his actions is true. He has the conditions of crime: distorted perceptions, feeble judgment, paralyzed conscience and imbecile will, established by alcohol within his nature.

The question is, has the drunken man voluntarily placed himself in a criminal attitude, at the same time knowing the consequences of his act? How many people *know* that alcohol will partially paralyze the whole nervous system, depriving the inebriate of the natural use of his physical, mental and moral powers? The drunkard does not know these facts. He does not believe them. He may imagine—if he is criminal in intent—that alcohol will *nerve* him for the deed which he may contemplate. Alcohol does not *nerve* the criminal mind at all. It unnerves, paralyzes the moral instrumentalities, and thus it reduces the drunkard to the level of the brute, the insensate reptile.

Every man supposes, ordinarily, that he will always be able to control his actions. While yet sober, he feels competent to foresee, provide for, and properly conduct all of his inebriate movements. He is apt to believe that the evils of intoxication are the outcomes of a mind naturally reckless and wicked, rather than of any special properties belonging to alcohol. The drunkard himself is of the opinion that an intoxicated person can control his actions if he desires to do so; and the strange part of his belief is, that it is founded upon his false notions respecting his own drunken powers. The sound mind cannot mark out lines of conduct for the same mind unsound. If it could insanity itself would be scarcely a defense for crime.

The *consciousness* of sobriety is on a different plane from that of drunkenness. The powers and qualities of one state are distinct from, and unlike those of the other. For this reason, a man who, when sober, has his mental faculties in perfect order, cannot conceive of himself as bereft of them when drunken. If the drunkard knew these facts, then he would "know that he cannot control his actions" when intoxicated; and the conclusion might justly be "that he must take the consequences of his acts." But he does not know them, and while sober and sane he cannot think of them as possible. His *sound* consciousness is ignorant of, and is incapable of recognizing anything in common with, the *impaired* consciousness of drunkenness.

There is a peculiar form of inebriety that has been classified as truly a disease. It is known as neurotic, or periodic drunkenness. It comes on at uncertain intervals of time. The intoxication itself is of the utmost violence. The strongest liquors are chosen, and they are consumed with a haste and ardor bordering on frenzy. The drinking bouts continue for a number of days. They are attended by several periods of alcoholic unconsciousness — the stupor being repeatedly slept away, and immediately thereafter brought on again by renewed potations. After several days of heavy drinking, the neurotic desire for intoxication dies out. Liquor is abandoned altogether; and, indeed, it is probably viewed with feelings of disgust. The period of sobriety may continue for days, and often for weeks—only to be interrupted by a sudden renewal of all the characteristics of unmanageable and unbounded intoxication. In the neurotic inebriate, drunkenness is carried to the utmost limit of human

[2] Med. Jurisp. of Inebriety, p. 7.

endurance, and the paralytic disabilities are more profound in him than in other drunkards.

The incentives to drinking differ widely in the neurotic inebriate, from those of the casual drinker. They are described to be of overwhelming force. The impulse for intoxication arises out of a condition of the nervous system which seems beyond the control of volition. With respect to the power of the will in periodic inebriety, there have been differences of opinion, and also some very positive assertions. Constitutional tendencies may abate, as life progresses, or they may change their forms and features by transmutation. In such ways the intense desire for intoxication may sometimes disappear, and the convulsive drunkard may seem to be actually "cured." These provisos being understood, it will be proper to adduce some authorities to show the nature and strength of the desire for intoxication which consumes the neurotic inebriate.

Alienists usually designate spasmodic drunkenness by the term *dipsomania*. They view it as a special form of inebriety, totally differing from all others in its causes, progress and termination. They class dipsomania with the insane neuroses —that is, with certain well known phases of nerve instability that are universally admitted to be in close alliance with insanity. A few authorities only will be given indicative of the general tenor of opinion amongst those best qualified to speak on this part of the subject; and it will appear that the heredity of this form of drunkenness, as well as its kinship with insanity, is fully conceded by them. These are points of consequence in deciding whether certain cases of drunkenness are "voluntary;" and also whether the spasmodic drinker may be supposed to "know" what will be the consequences of intoxication in his own person.

When treating of *heredity*, Maudsley divides the subject into three branches: 1. Heredity of the same form. 2. Of allied forms. 3. With transformation of neurosis. Of heredity of the same form the author says: "that is, when a person suffers from the same kind of mental derangement, which he seldom does, except in cases of suicide or *dipsomania*." Dr. M. says in another connection: "An individual inherits from his parents not only their family nature, . . . but something from their individual characters, as these have been modified by their sufferings and doings, their errors and achievements, their developments or their degradation." Our author declares that "epilepsy, paroxysmal neuralgia, strong hysteria, *dipsomania*, spasmodic asthma, hypochondriasis and suicidal melancholia may predispose to mental derangements in the offspring, as, conversely, insanity in the parent may predispose to other forms of nervous disease in the offspring." [3]

[3] Pathology of Mind, pp. 91–107, 108.

Dr. Blandford[4] speaks as follows: "The particular character of the mania or melancholia depends upon the constitution of the individual, . . . and the same person may at one time be maniacal and at another melancholic. It is true we frequently see the same form in successive generations, *e. g.*, suicidal melancholy and *hereditary drunkenness*." Again Dr. B. says: "Intemperance is increasing rather than diminishing. Hence, I believe, springs the ever renewed insanity of our lower orders. My opinion is that, amongst the lower classes, insanity is on the increase. . . . There is a degree of drunkenness amongst the lower classes that is not found in the higher."

Dr. Bucknill says: "Inquiry into the habits will often discover cause for the production of insanity; habits of *intemperance* for instance, and habits of strong mental excitement." Such men as Bucknill and Blandford find no difficulty in recognizing alcohol as a cause of insanity. Bucknill is at pains to assert that "*strong drink* does often cause disease of the nervous system with disturbance of the mental faculties; and also that such diseases coming from other sources, do give rise to the passion for drink. These are facts that can admit of no doubt. The heredity of such cases and their periodicity are well known to physicians who have made madness their study."[5]

"When mental disease is transmitted, does the form of insanity descend?" is the inquiry of Dr. Tuke. In reply he says: "very frequently this is the case." Dr. T. then gives authorities testifying as to the direct descent from ancestry of hallucinations, monomania, melancholia, mania, general paralysis and idiocy; and he remarks upon his own authority: "Of *dipsomania*, the cases are so common that it is not necessary to detail examples." Tuke quotes from Stewart, of the Crichton Institution, a table showing the descent *in the same form*, of different insane neuroses. In this table *dipsomania* is said to descend as such in 63 per cent. of cases.[6]

Dr. Wynter speaks to the same effect, and classes *dipsomania* with the insane neuroses. Winslow declares: "I do affirm that in estimating the *amount* of punishment to be awarded, it is the duty of the judge to consider the physical condition of the culprit, . . . and *above all*, whether he has not sprung from *intemperate*, insane, idiotic and criminal parents."[7] Unfortunately for this reasonable sentiment, if a person is responsible at all, he is, in the eyes of the law, fully responsible.

It will be perceived that the authorities quoted are men distinguished as practical alienists, and as conclusive writers on the subject of insanity;

[4] Insanity and Its Treatment, pp. 139–145.
[5] Psychol. Med., p. 401; Habitual Drunkenness, p. 57.
[6] Psychological Med., pp. 67–70.
[7] Borderlands of Insanity, p. 49.
[8] Lectures on Insanity, p. 156.

and that they classify dipsomania with the insane neuroses.

But notwithstanding all this, the distinguished jurist, Hon. Noah Davis, of New York, speaks as follows: "Doctors are very apt to fall into the idea that inebriety should of itself act as an excuse for crime. It may perhaps act justly, in some cases, as a modification of the guilt, in the mind of an intelligent judge, to grade the crime or affect the sentence." No one thinks of excusing inebriate crime upon the plea that drunkenness is merely a physical disease, except in so far as disease may contribute to the production of mental and moral incapacity. But Judge Davis himself declares: "there is no excuse or defense for crime in insanity, because *where insanity exists there is no crime.*"[9]

Sometimes there appears to be a gradual elimination of the constitutional crave for intoxication. This may be disguised, however, by the facts of habit and automatism. But the habit being once broken, or rather interrupted—as by some sudden and powerful excitement—the neurotic inebriate may then discover that the terrible longing for intoxication no longer vexes him. He is now credited with a "voluntary" reformation; and he is considered to furnish an exemplification of the notion that the dipsomaniac may reform when he chooses, and also, that he can choose to reform. But there is little doubt that this apparent reformation of the neurotic inebriate is sometimes the result of transmutation of neurotic forms—some particular neurosis, perhaps not always easily detected, taking the place of the dipsomaniacal crave. In such a case there will likely be, sooner or later, a relapse into dipsomania.

There are some considerations which may cast a doubt upon the correctness of the legal assumption regarding the responsibility of the neurotic inebriate. One is, it is *possible* that the drinker may not "voluntarily" have placed himself in a state of intoxication. Another is—it is *possible* that he did not "know" that he could not control his actions when intoxicated.

The continuous repetition of violent intoxication in periodic inebriety, begins at length to inaugurate physical changes and degenerations of the most extensive and serious character. Violent intoxication produces an excessive strain upon the heart and blood-vessels. The frequency of the pulse is increased. The heart itself is made "tense and full," and its walls become weakened and dilated, and its valvular structure is injured. The arteries are stretched, and their elasticity is enfeebled, and the veins become enlarged. "There is," says Dr. B. W. Richardson, "dilatation of the heart with stretching of the valves, especially the semilunars." These injuries to the circulation impress the mental and moral powers unfavorably. Heart disease may cause insanity. Here is a physical condition which aids the neurotic feelings in overcoming the will, and lessens the volitional power to abstain from drink. Heart disease is a common trouble with the periodic drunkard. A large proportion of such persons learn to take alcohol for "palpitation" and "fluttering" of the heart, being ignorant that the temporary relief thus attained, is at the price of increasing and intensified cardiac disorder.

A remarkable disability that is liable to affect the periodic inebriate has been called *alcoholic trance*. Although trance may occur in nervous constitutions without the intervention of alcohol, the toxic effects of that agent exert a peculiar influence in producing it. Alcoholic trance seems to be associated with a deranged consciousness. The person affected presents a dazed and preoccupied appearance. The life of relation is automatic. It is not always easy to detect the trance state, and the person affected is totally ignorant of its existence. Trance may last for a few hours or for many days. Consciousness exists on a plane below its normal level. It is not actually wanting; for a series of consecutive movements attest a certain degree or condition of conscious life. While in the trance state, the consciousness that is connected with automatic existence is separated and disrupted from normal and perfect consciousness. Hence, when trance is present, the events of the normal surroundings—which indeed appertain to normal consciousness—are not noticed; and the remembrance of events then taking place is impossible after the mind resumes its natural functions. Trance life is a blank in memory, and is unknown to all the realities of a healthful existence.

But the great and important fact in the phenomena of alcoholic trance is this: the trance condition is separated completely from healthful consciousness. It has no relations with the rational past nor associations with a rational future. The mind is deprived of the experience and knowledge that might be drawn from its material surroundings, in the formation of such judgments as are necessary for its intelligent guidance, in matters of motive, will and conduct. No man can act with sound responsibility, when he is deprived of the power to know what are the relations and sequences of passing facts.

It is known that morbid changes in the connective substance of the body may be produced by the alcoholic influence, affecting the well-being of the general structure. Entire organs are affected, and nervous and muscular degenerations take place.

It happens at length that the deteriorations and injuries produced by alcohol, themselves, become incentives to intoxication. The proclivity to periodic drunkenness vanishes, perhaps altogether; while the increasing distress, arising from the va-

[9] Med. Jurisprudence of Inebriety, pp. 129-131.

rious physical degenerations of alcohol, calls without ceasing for the lethal influence of intoxication. And so it is, that the periodic inebriate becomes transformed into the daily sot — the *habitual drunkard*.

The habitual drunkard is a degradation from the casual, or from the neurotic inebriate. In daily drunkenness, the periodicity of the neurotic temperament has been overcome by modifications in the constitution caused by early alcoholic excesses. Heart disease, proliferation of the interstitial tissue, degenerations of nerve structure, paralysis of sensation and motion, a feeble intellect, a depraved morality, an unstable consciousness—combine to deprive habitual drunkenness of the *volitional* element that is essential to responsibility.

The hopeless condition of the alcoholic wreckage in habitual drunkenness is further illustrated by some recent researches of the Pathological Society of London. A portion of its report is as follows—the subjects being inebriates: 1. Transverse section of plantar nerve showed *degeneration and inflammatory changes*. 2. Longitudinal section of plantar nerve showed *increase of nuclei and infiltration of leucocytes*. 3. Longitudinal section of phrenic nerve showed *degeneration of nerve fibres, with segmentation of the myeline*. 4. Section of musculo-spiral nerve, with *well marked segmentation of myeline*. 5. Preparation of anterior tibial nerve showed *nerve fibres in various stages of degeneration*. 6. Transverse section of nerve showed *interstitial thickening of endoneurium*. 7. Section of muscle showed *increase of nuclei of sarcolemma, and infiltration of with leucocytes*—with much more of the same sort. Alcoholic changes of the liver and kidneys also were noted.

The claim that an habitual drunkard can *voluntarily* partake of alcohol, *knowing* also that it will take away his self-control, is placing upon him a weight of responsibility that he is ill able to bear.

There is a form of inebriety distinct from that of the casual, or the spasmodic, or the habitual drunkard. The *chronic inebriate* may be called the sum total of all drunkenness. In him are crystallized the disabilities, degenerations and disasters of alcoholic intemperance. Brief functional disorders have changed to structural diseases. The heart is permanently injured, the circulation permanently disturbed, the sensibilities permanently obscured. Reason is defective, morality is darkened, and the will is enfeebled, by the paralysis of alcohol, which, in the chronic inebriate, has become *fixed*.

Automatic and trance life characterize the chronic inebriate. One J. H., a lawyer, drank heavily for years, especially in the evening. By means of certain documents, and also through business transactions, he discovered that he was living a double life, concerning one part of which he had no conscious knowledge nor recollection. This both puzzled and frightened the gentleman—a person of very sensitive disposition—and for several years previous to his death he closely watched his own movements, lest he might, unaware, say or do some undesirable thing. Notwithstanding this, the man undoubtedly lived a trance, or automatic life during a great portion of his closing years.

The disposition of the chronic inebriate, when unclouded by the shadows of insanity, is such that he prefers solitude to the society of men. His friend and companion, the bottle, is more desirable in his eyes than the dram-shop; and hunting or fishing, remote from the presence of human kind, fill, perhaps, the measure of his ambition, and define the boundaries of his industry. The disabilities of the chronic inebriate are of such an extent and nature as to render him, in every part of his existence, an imbecile. He is incapable of rational judgment, or volition, or knowledge, or accountability.

ADENOID HYPERTROPHY AT THE VAULT OF THE PHARYNX; ITS PATHOLOGY AND TREATMENT.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY D. BRYSON DELAVAN, M.D.,
OF NEW YORK.

Two satisfactory reasons exist why such a subject as the above should be presented: first, because it is possible that to some it may not be as familiar as its importance warrants, and, secondly, for the reason that the interchange of personal experience in matters relating to the practical management of a serious difficulty is never without value. I have taken the liberty, therefore, of bringing it before you and, in particular, of calling attention to some special points connected with it which are of great importance to the proper understanding and the successful management of one of the most annoying and pernicious conditions which we are called upon to treat.

Adenoid hypertrophy at the vault of the pharynx may be defined as a condition of chronic enlargement of the collection of lymphoid tissue at the vault or roof of the retro-nasal space, otherwise known as Luschka's tonsil.

The history of this affection may be very briefly stated. Although the presence of an unnatural enlargement in the upper part of the pharynx had been noticed, it is said, by Schneider, as early as 1655, it remained for the distinguished Prof. Wilhelm Meyer, of Copenhagen, to estimate

it at its true value and to propose efficient means for its relief; and while many other authorities have described it since 1868, the date of Dr. Meyer's first article on the subject, that paper is classic and still remains one of the very best ever written.

FIGURE 1.

As to the pathology of hypertrophy of Luschka's tonsil it may be said, in general, that the gland is similar in structure to the other deposits of adenoid tissue which encircle the pharynx. In the diseased condition now under consideration it is susceptible of two classes of difficulty. The first of these is an acute or sub-acute inflammation, attended with temporary enlargement, the said enlargement subsiding with the disappearance of the exciting cause. While this cannot be called a true hypertrophy it is a lesion of great importance, both on account of the temporary inconvenience which it causes and, also, by reason of the tendency which it manifests to leave behind a permanent enlargement of greater or less degree.

FIG. 2.—Side view of the pharynx, representing the same normal condition as fig. 1. In natural respiration the mouth is closed and the current of air enters through the nose, where it is first filtered, warmed and furnished with moisture, and then passed directly downwards through the larynx and trachea into the lungs.

This permanent or chronic enlargement in the course of time constitutes a true hypertrophy, and, although its actual degree may vary under the general influences which cause it to grow better or worse, it never entirely subsides. Chronic hypertrophy, as commonly met with, is itself of two varieties. In the first the adenoid element seems to predominate, while, externally, the surface of the enlargement is irregular, often simulating a true papilloma. The inconsistency of this variety is one of its chief characteristics, for it is soft to the touch, friable, easily broken up, and shows a tendency, when torn away, to separate in large spongy masses.

FIG. 3.—The upper pharynx, showing a large adenoid growth *A* springing from the vault, filling the superior part of the pharynx, covering the tube leading to the ear *C*, and obstructing the entrance to the nose *B*.—(*Lefferts.*)

In the second variety the conditions are essentially different. The hypertrophied mass partakes more of the nature of a well-defined tumor, its base being tolerably small, its surface smooth,

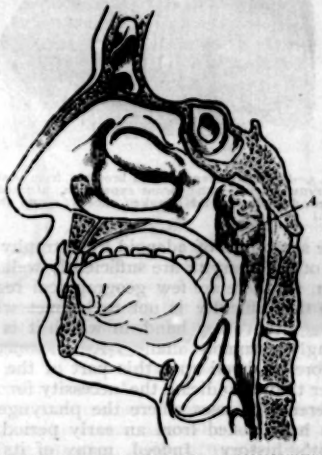


FIG. 4.—Side view of number 2, showing obstruction *A* in upper part of pharynx. Owing to this, the patient must breathe through the mouth.

its consistence firm and its substance composed more largely of fibrous tissue element. Operation upon the latter variety is far more difficult

than the former, as its dense structure offers greater resistance to the efforts of the surgeon, which, when successful, result in the removal of but small masses of firm tissue, in marked contrast to the large fragments which are easily torn away in cases representing the variety first mentioned.

The location of the growth is of great practical importance, both as regards its effects and as to the comparative difficulty of its removal. Its size may be so great as to practically fill the retro-nasal space, or, on the other hand, the increase in its volume may be so slight as to make it difficult to determine whether or not its condition is pathological. It may be confined strictly to the vault, or it may be diffused over the posterior and lateral walls of the pharynx, or it may exist upon the posterior wall of the pharynx alone, in a large, well aggregated, tumor-like mass.

FIG. 5.—Boy aged seven. Mouth breather, from obstruction of the pharynx; open mouth; vacant expression; pinched nostrils; dull eyes; drooping eyelids; sunken cheeks; round shoulders.—(*Hooper.*)

The symptoms of adenoid hypertrophy at the vault of the pharynx are sufficiently well known to you, for there are few geographical regions in which the difficulty is not to be met with and many, on the other hand, in which it is an exceedingly common affair. It is unnecessary, therefore, to dwell upon this part of the subject further than to indicate the necessity for prompt interference in cases where the pharyngeal condition has existed from an early period in the patient's history. Indeed, many of its results are their own most eloquent witnesses. The stupid expression, anæmic surface, drooping eyelids, open mouth, projecting teeth, arched palate, pinched nostrils, and the deformed chest, on the one hand; and the mental dulness, loss of hearing, nasal obstruction, with all of the distressing symptoms of which it is the cause, the defective speech and constant catarrh on the other, are all sufficiently apparent to the most casual observer; while the reflex effects, as shown in the constant headache, irritative cough, laryngeal spasm and other neurotic symptoms, including in some exceptional cases such extreme results as chorea and, it is said, epilepsy, offer corroborative evidence to the more visible and tangible conditions already mentioned. Even in the infant it may be suspected, through the presence of mouth breathing, snoring, and a marked inability to perform the act of nursing.

There is one effect of this obstruction to nasal respiration, however, which is not unworthy of consideration. I refer to the permanent deformity of the bony framework of the nose and hard palate, due primarily, as it appears, to atmospheric pressure. While with the angular upper jaw and high arched hard palate it is sometimes possible to find a normal nasal septum, the contrary condition is the rule.

Some of the worst exhibitions of septal deformity met with are associated with obstruction to free nasal respiration. The well known experiment of occluding one nostril in a growing rabbit has proved conclusively that marked asymmetry may result, and there is every reason to believe that similar causes in the young child may be followed by like deformities, and that too, at a very early period of the child's history. Zuckerkandl, whose observations have mainly been confined to the dead-house, goes contrary to common clinical experience when he makes the positive statement that deflection of the nasal septum never occurs before the seventh year. I am confident that deformity of the septum and of the other bony structures of the nose may arise early in life from obstruction to nasal respiration, due to adenoid hypertrophy in the retro-pharyngeal space and that in consequence, during the period of constructive activity, impeded nasal respiration is a constant menace to the healthy development of the osseous structures of the nose. Indeed, one of the most marked deflections of the nasal septum I have ever seen was in a boy three and a half years old. Nor is it the nose alone which thus suffers. The experiments above quoted prove that unless the air enter normally the sinuses adjacent to the nose, they too will be undeveloped and, in consequence, the whole conformation of the face may be materially changed.

Finally, as has been stated, nervous symptoms innumerable, both direct and reflex, must be recognized and their true origin traced, the general principle being conceded that the disease in question has extraordinary capabilities in producing them and that it is difficult or even useless to attempt to control them without removing their prime cause.

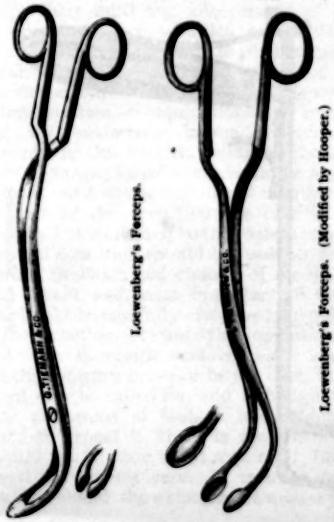
Considering these things it becomes highly important to secure the early recognition of the necessity for treatment in such cases, and to see that it is carried out promptly, efficiently, and to the best good of the patient. The treatment in these cases must depend in some degree upon the nature of the growth, the size to which it has attained, and upon the age of the patient.

In a few instances, where the disease is acute or sub-acute, where the tissue is soft, and where the growth is small, or finally, where the patient is old enough to submit to local treatment, the application of resorptives and the administration of alterative and tonic medicines, together with careful attention to hygiene, may accomplish a cure. Too often, however, these means will be found unsatisfactory, and the question of radical measures will present itself. Here, as in many other instances, surgery comes to the rescue, and where other resources have failed, we have in it the means of immediate, certain and radical cure. And first, as to the methods by which the offending tissue may be removed, two general classes of operation are employed. The first of these is the destruction of the growth by means of caustic substances or the galvano-cautery, and the

Ring Knife, or Curette.

second, and by far the most popular, its forcible removal by means of some surgical instrument. With the first method we have seldom been able to attain as satisfactory results as with the second, although in certain exceptional cases, where the amount of tissue to be removed is small and its situation remote, it is both convenient and efficient.

By far the larger number of the more severe cases, however, will demand removal by cutting or tearing process. To meet the requirements of this many ipstruments have been devised, some of great practical utility, and others of little or no importance. These instruments may be divided into four classes: *a*. Those made upon the principle of the curette; *b*. the double curette or forceps; *c*. the wire loop, and finally, *d*. the adenomatome. The first class includes the ring-knife of Dr. Meyer and its modification, the sharpened finger nail of the operator, a most useful adjunct to the more complicated instruments, and the artificial finger nail, a metallic shield, made to be adjusted to the tip of the finger of the operator and having a sharp rounded edge corresponding to the finger nail; the second, the forceps of Loewenberg and its varieties; the third, an ingenious modification of the Jarvis snare, and finally the fourth, a double cutting instrument, furnished with scissors blades, called the adenomatome.



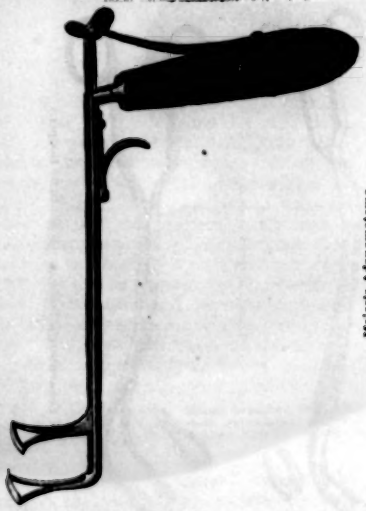
Loewenberg's Forceps. Loewenberg's Forceps. (Modified by Hooper.)

Of these instruments the one most generally useful in the hands of the writer is a modified Loewenberg forceps. With this, assisted by the finger nail of the operator, most cases may be satisfactorily reached.

The other instruments necessary for operating under anæsthesia are, a good mouth-gag, and a soft-palate retractor. The latter should be made with a shank broad enough to protect the uvula from injury during the process of operation.

The position of the patient during operation is of considerable importance. Two methods are in common practice. In the first, the child is

held upon the lap of an assistant in the sitting posture, with the head upright and turned toward a good light. The head is steadied by a second assistant, who also manages the mouth-gag. The soft-palate may be drawn upwards and forwards by means of the palate-retractor, or it may be secured by tapes passed inwards through the nose and outwards through the mouth and the ends tied outside after Wales' method. With the head inclined forward in this position the blood caused by the operation will tend to escape from the mouth to the outer world, instead of being swallowed. Moreover, the pharynx can be well illuminated and the steps of the operation better directed by the aid of vision. The position upon the back is preferred by many good operators, requiring as it does, the services of fewer assistants and being the one to which a large majority of surgeons are better accustomed. It is not so favorable as regards the admission of light to the pharynx, and therefore, it requires a greater degree of skill on the part of the operator,



Major's Adenomatome.

whose tactile sense must be highly educated by way of substitute. Blood, instead of flowing out of the mouth, is swallowed into the stomach. This is not a decided disadvantage, for it trickles down from the posterior wall of the pharynx and escapes into the œsophagus, almost without making its presence felt, unless the flow excited has been considerable.

A possible objection to the upright position is the additional risk of fragments of detached tissue falling into the larynx and thus causing asphyxia. Such an accident has been reported. It is not probable that it could occur under the use of the forceps, although by no means impossible with the ring-knife.

The management of a palate-retractor should be entrusted to a skilled assistant, as upon this the convenience, and, to some extent, the success of the operator will depend. Great care should be taken to place the retractor in such a position that the antero-posterior diameter of the entrance to the upper pharynx be made as wide as possible and that the most perfect protection be afforded to the uvula. Preliminary to operation the most thorough rhinoscopic examination possible should have been made and the situation, form, size and texture of the growth well studied. Where this is impossible examination by means of the finger is admissable, and digital exploration of the pharynx should always be made after the child has been anæsthetized and immediately prior to the operation. Should the growth be large and its attachments not easily demonstrated by the finger, a curved probe will lend useful aid in their mapping out. By the practice of careful preliminary examination, a fair idea of the amount of tissue to be removed may be gained and if, during the operation, the fragments removed be preserved, it will be easy to estimate what part of the growth has been withdrawn and how much of it still remains.

The removal of adenoid tissue from the pharynx is attended with more or less bleeding, and this, while generally of no importance, may sometimes be considerable. It is best, therefore, that the tissue be torn away, rather than cut. This method has the additional advantage of greater thoroughness, as masses of adenoid much larger than the fragment grasped by the instrument are frequently separated and, by this method, it is not likely that the healthy and more resisting parts will be injured. Remnants of adenoid tissue left behind by the forceps may be removed by the finger nail of the operator, by Hooper's modification of the Loewenberg forceps, or by means of a small carefully guided curette. Should the removal of a mass of adenoid be followed by undue bleeding it is well to defer further attempts at operation for a few moments, until the hæmorrhage shall have ceased, or, at least, until it shall have sufficiently diminished. Too great force in the separation of a fragment of tissue must be avoided. It is better to release the mass included in the grasp of the forceps and seize a smaller portion, or else, by applying them in a somewhat different position to separate adherent fragments, than it is to attempt to accomplish too much at once.

The manipulation of the instruments used in this operation as well as the *tactus eruditus* necessary to the clear understanding of what is being done are accomplishments which, of course, are best gained by practice and experience; it is safe to say that with the majority of operators, although

satisfactory improvement may be secured after a limited number of cases have been studied, better and more certain results will be attained as the number of operations increases, and the skill of the operator is cultivated thereby.

In operating upon the upper pharynx anæsthesia is of the greatest possible value both to the physician and to the patient. The almost universal testimony, both from children and adults, is to the effect that the process of the removal of adenoid tissue from the pharyngeal vault is exceedingly painful. Exceptions to this are undoubtedly met with, and in the case of the strong and phlegmatic, and where the growth is soft, it may be well to dispense with a general anæsthetic in favor of cocaine. As a rule, however, patients who suffer from adenoid hypertrophy are not strong, nor are they phlegmatic. On the contrary, they are apt to be delicate, nervous and timorous, easily alarmed, susceptible of acute suffering, and, finally, likely to undergo a highly undesirable degree of depression as the direct result of operation. Not only is the comfort of the patient secured through anæsthesia, but the convenience of the operator is infinitely increased thereby, as may be readily proved by contrasting the difficulties in the way of successfully executing a delicate operation, requiring accuracy and care, upon a child whose struggles cannot be wholly restrained, even by the aid of strong assistants, with the same performance accomplished quietly and with deliberation. With general anæsthesia ample time is afforded for careful examination both before the commencement of the operation and during its progress and for the checking of undue bleeding should any occur; perfect control of the operation, as well as of the patient can be maintained; thorough relaxation of the throat can be secured; the inducement of retching, from pharyngeal irritation, that most active and persistent of reflexes, can be avoided; troublesome remnants of the growth can be recognized and removed; undue excitement can be prevented; and, finally, the whole work can be accomplished without pain and even without the slightest knowledge on the part of the patient of what has been done.

On the other hand, to grasp a highly sensitive child and hold him by main force; to display before him an array of surgical instruments; then to pry open his reluctant jaws; to plunge wildly into a remote and highly organized recess like the upper pharynx an instrument possibly too large to enter with ease; there to seize and remove "by a tearing and twisting process" large fragments of tissue with a sensation described by adult patients "as if the top of the head were being torn off;" to repeat this again and again at one sitting, the child meanwhile being half strangled with blood; or, worse still perhaps, to continue it at repeated sittings, is a process which cannot be too strongly deprecated, and which may naturally result in terrorizing the child, and in imparting a nervous shock, in itself by no means devoid of danger. It may be said, it is true, that the above seems overdrawn and that no one would think of operating in the manner described. Unfortunately, however, such operations have been and are done, and it is the wish of the writer to urge most strenuously against them.

As to the choice between ether and chloroform, aside from other considerations the latter has the special advantage of not exciting the abundant flow of viscid mucous from the pharynx which accompanies the administration of ether.

The care of the child after operation is a matter of considerable importance. Two varieties of treatment, one immediate, the other remote, must be carried out. As to the first, it must be remembered that, for perhaps several days after the operation, the patient is laboring under what may be called the surgical condition. During this time he should, if possible, be put to bed, and kept there until any abnormality of pulse and temperature have subsided and until any signs of nervous shock may have disappeared. Attention to this detail even at the cost of some inconvenience will be amply repaid. Meanwhile the administration of tonic doses of iron and quinine will materially hasten recovery. In other words, to this surgical condition the ordinary rules of surgical treatment should be applied.

Again, it must not be considered that with the performance of the operation the case is completed and all possible help to the patient afforded. The general condition should be made as perfect as possible, to which end change of air is often of great benefit, and, most important of all, the patient should be carefully examined in order to determine whether or not the operation has resulted in a thorough and complete success. Should the contrary prove to be the case, further treatment may be called for, and although when properly performed at first, it will seldom be necessary to repeat it, there is no reason why this should not be done when required. Indeed, it is well, in difficult cases, to mention to the parents beforehand the existence of such a possibility.

The pharyx being freed from the offending tissue, such conditions as catarrhal inflammation, relaxation of the uvula and the general tendency to local congestion can be greatly benefited by topical treatment, although it is pleasant to be able to record that in most instances special interference will be unnecessary.

The second variety of treatment relates to the cure of certain direct results of the naso-pharyngeal obstruction, namely, to mouth breathing, to errors of pronunciation and to deformities of the chest walls and of the framework of the nose.

When free nasal respiration has been actually established every possible encouragement should be held out to the patient to close the mouth and breathe through the nose, both while awake and asleep. Much help will be given if the jaw drop during sleep by affording it some artificial support. For this purpose a bandage of mull, tied under the chin and over the top of the head, this held in place by a second bandage tied around the forehead, the two being held together with safety pins at their intersection opposite the temples, as suggested by Dr. T. R. French will be found effective.

FIG. 6.—Method of bandaging the chin to prevent mouth breathing during sleep.—(*French.*)

The difficulty in pronouncing certain consonants is sometimes due partly to the relaxation of the soft palate common in these cases and it does not disappear immediately after the removal of the pharyngeal tumor. This condition should be remedied by appropriate local treatment, the patient meanwhile being trained by suitable vocal exercises.

Deformity of the chest, the so-called "pigeon chest," so commonly present in these cases, should be recognized, and physicial exercise appropriate for its eradication, be instituted. Nasal deformities too should be looked for and, if present, appropriately treated, although it is often astonishing, particularly in the case of the very young, how readily they will subside under the influence of the admission of fresh air and the restoration of the normal function of the organ.

In conclusion, it will appear that adenoid hypertrophy at the vault of the pharynx is a disease of common occurrence; that its presence is fraught with danger, particularly in children during the growing period; that the condition is easily recognized even by those not specially versed in the diagnosis of diseases of the throat; that it is absolutely remediable; and, finally, that by the use of skill and thoroughness in the performance of the necessary operation the most satisfactory results can be attained.

A CASE OF OLD FRACTURE OF THE PATELLA CURED BY WIRING THE FRAGMENTS.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. C. WILE, A.M., M.D.,
OF DANBURY, CONN.
EX-VICE-PRESIDENT AMERICAN MEDICAL ASSOCIATION; PRESIDENT OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION; MEMBER OF THE BRITISH MEDICAL SOCIETY; EDITOR OF THE NEW ENGLAND MEDICAL MONTHLY, ETC.

Of all the various fractures of bones of the human body, there is *none* which excites more uneasiness as to the result of the healing process, in the mind of the surgeon, than does a solution of the continuity of the patella. Various devices have been advocated for the purpose of keeping the fragments in apposition, in order to have the desire of the surgeon realized—union by bone, instead of cartilage; but none of these instruments have produced the results of which, taken collectively, we may as a profession be proud. To be sure, with the hooks of Malgaigne, better results have been obtained in later years than formerly, though the failures have been many and near together, while diseases of the fragments of bone may have been caused by their use.

To say the least, they are cruel. Next to the hooks, come in their order plaster of Paris, mole skin plaster, bandaging, etc.; *all* of which in our hands have proved unsatisfactory. To be sure, an occasional case will get well with fair results, from seemingly simple dressings, but these cases are exceptional and unusual. About twenty-five years ago the method of cutting down, and in the case of old ununited fractures freshening the edges of the fragments, and wiring them together with silver wire, came into vogue. For a time it fell into disuse, to be again revived by that famous surgeon, Sir Joseph Lister, the man to whom we owe our deepest debt of gratitude. One thing seems to be pretty well established, and that is, by this method a greater percentage of good recoveries have been reported, than by any other, and if done under strict antiseptic precautions, it is comparatively free from danger. The following case will illustrate the method and result:

John F. H., an American, 41 years old, of bad habits, on January 23, 1884, about 5 P.M., slipped on the ice at 148th St. and North Third Ave., New York City, and fell heavily to the sidewalk, striking his right knee. On attempting to rise he found he could not do so. An ambulance was called and he was taken to the Reception Hospital of Bellevue Hospital. At this place it was set, by means of, as he termed it, a surgical instrument and rubber plaster. He was kept there for two weeks and two days. On the Sunday evening previous, Prof. Frederick S. Dennis saw him. August 31, had him put in a plaster of Paris splint and transferred him to St. Vincent Hospital. Here the plaster of Paris splint was

kept on for three days, when he was taken to the operating room and Prof. Dennis applied Malgaigne's hooks. This was done without ether but with considerable pain. These hooks were kept on for six weeks and were then taken out, but not without a great deal of pain during their removal by house surgeon Riley. He remained in the hospital two weeks more and then left with an ununited fracture, but still with the aid of a cane he was able to crawl around. In October, 1887, he was brought to me by Dr. G. H. Pierce, of this city. I found that the bone was fractured in three pieces, that there was only cartilaginous union, and that the gap between the fragments was about 2 inches. His trade was that of an awning maker, and at it he could not work at all. In fact, he was liable to fall at any time from the slightest rotation inward or outward of the foot. I advised an operation and he was removed to the Danbury Hospital, where, on November 26, in the presence of Dr. Robt. T. Morris, of New York. Drs. Watson and Pierce, of Danbury, Barber, of Bethel, and Todd, of Ridgefield, I did the following operation: Thoroughly washing the parts with soap and water, aided by a nail brush, and shaving, and then douching the limb with a solution of bichloride 1–1,000, I made an incision (an irrigating tube playing on the wound all the time, with a bichloride solution 1–1,000), in the median line over the patella. The incision was about 7 inches long and the skin and fascia were then dissected up. I found that the fragments were widely separated and connected only with moderately firm cartilaginous bands. These I dissected out, and with a cartilage knife, I cut away enough of the bone of each fragment to make a well roughened edge. By the aid of assistants I made holes in them and, drawing them together with double silver wire, I twisted them tightly. The coaptation was perfect.

After all the sutures were in position, the ends were twisted and hammered into the larger fragments, where they have remained to this day, causing no inconvenience whatever. The débris was all cleared out, bleeding stopped, the edges of the wound brought together with silkworm gut stitches, iodoform dusted on the external surfaces, a cotton pad placed over all and a roller applied. A straight board splint was applied to the posterior surface of limb, held in place simply with a roller. The patient rallied from the shock quickly, and for ten days did not have a pain or suffer the slightest inconvenience. On the thirteenth day I took off the posterior splint and put on a plaster of Paris dressing, but this caused so much pain that I had to remove it on the same day, replacing it with the old one taken off. The patient was kept in the recumbent position for eight weeks, when he was allowed to go about the ward. The wound healed throughout its entire extent by first intention. There was *no* inflammation of any character, and when he was discharged after three months there was firm union; the limb was as strong, he said, as ever. Here certainly was a man restored to usefulness by the wiring of the fragments when several other methods had failed.

THE MECHANICAL TREATMENT OF SYNOVITIS OF THE WRIST.

BY CHARLES F. STILLMAN, M.Sc., M.D.,
OF CHICAGO. (MEMBER OF THE AMERICAN ORTHOPÆDIC ASSOCIATION.)

In cases of a mild grade of inflammatory action, felt splints or immobile dressings may be used, but in those of a more serious character, when traction becomes necessary, it may readily be produced, and fixation of the joint increased and maintained by the use of two plain wooden splints extending from the base of the fingers to the elbow (see fig. 2). These are to be notched at each end and are not to be wider than the arm. They are to be placed one anteriorly and the other posteriorly, and are applied by means of adhesive plaster in the following manner:

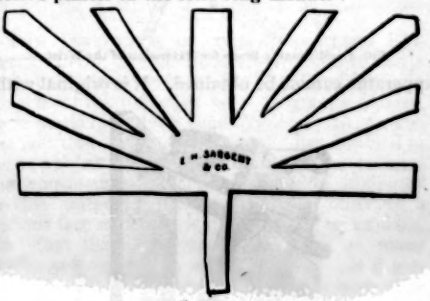


FIGURE 1.

Select plaster of the moleskin variety, and cut four pieces in fan shape shown in fig. 1. To the center of these attach, with needle and thread, strong webbing straps, each a trifle longer than the wooden splints, and to the free extremities of two of these straps, secure buckles of the same width. These four adhesive plaster fans are next to be interlaced, two above the joint and two below, and the ends are to be drawn over to the extremities of the splints, and buckled together as shown in fig. 2. It will readily be seen that the more tightly these are drawn, the greater the traction will be upon that part of the wrist between the interlacing adhesive plasters, and thus will be effected a true extension of the wrist itself.

These splints are to be secured by four or five transverse bands of adhesive plaster around the arm and hand (see fig. 2), and over all a roller bandage is to be neatly applied. This method

of producing traction is simple, ready and effect-

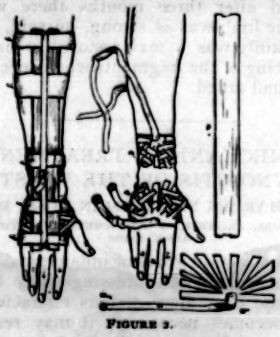


FIGURE 3.

ive for any of the joints, where more elaborate

FIG. 3.—Stillman's Brace for Extension of the Wrist.

apparatus cannot be obtained. It is original with the writer and was first published by him about eight years ago. In many cases it will be found preferable for the surgeon to use a traction splint which will allow the hand to be fixed at any given angle with the arm, and fig. 3 represents such a brace devised by the writer. As will be seen by the engraving it permits fixation at any angle, and allows motion without interfering with the traction upon the wrist, and is applied in a manner similar to that of the wooden splint just described, but as it permits more control of the joint than the latter splint, it is to be be preferred when obtainable.

When extension of the joint is desired—and yet a brace is objected to—Esmarch's traction apparatus may be employed. This is shown in fig. 4 and is applied in a manner corresponding to Buck's extension of the lower limb, the arm resting upon a pillow and inclined plane. But as this method of producing extension, necessarily implies confinement to the couch, it is open to objections, which the use of traction splints, even in severe cases, does not present.

The use of the various forms of apparatus just described renders the treatment of inflammatory and deformative conditions of the wrist an easy matter, and the results of all operations about the joint, are, by their use, rendered very much more certain.

125 State street, Chicago, Ill.

FIG. 4.—Esmarch's Apparatus for Wrist Extension.

APPENDICITIS, WITH REPORT OF ONE CASE; ILLUSTRATED.

BY A. C. LAMOTHE RAMSAY, M.D.,
OF ST. CLOUD, MINN.

This case is a beautiful illustration of what Senn says in his masterly article on "Ulcerative Appendicitis" (in Vol. xiii, No. 18 of THE JOURNAL): "Many patients suffer from well-defined symptoms indicative of the presence of an inflammatory lesion of the appendix for months and years before it gives rise to a perityphlitis or perforative peritonitis."

Peter R., æt. 27, student, consulted me at my office December 14, for a vague recurring pain in the lower part of the abdomen of four years' duration. He attributed it to running one day, when he felt something give way in the ilio-cæcal region. He was a strong, muscular young man with a good family history, and besides those pains had never been sick. The pains had never caused vomiting except once, two years ago. His pulse was 82; temp. 37.7° C.

Examination revealed no tympanitis, no swelling in ileo-cæcal region, and only slight tenderness on deep pressure. Rectal examination revealed nothing abnormal. Urine normal. He

never had suffered from constipation and very seldom from diarrhœa.

My diagnosis was appendicitis, and an early operation advised.

The next morning I was called to see him. There was more pain and very marked tenderness over the cæcal region. As he grew no better, he consented to the operative interference, and was admitted in my service in St Benedict's Hospital December 18, and prepared for the operation by thorough antisepsis.

Natural size. 1, perforated extremity. 2, ulcer. 3, calculus.

Operation December 19. — Ether anæsthesia. After removing the preparatory dressing of iodoform gauze the parts were washed with ether and the usual incision for ligation of the common iliac artery made. All bleeding points were carefully secured, and on getting down to the peritoneal cavity behind the cæcum, a small calculus, the size of a large bean, was found lying in a tablespoonful of fæcal-smelling pus. There was a well organized blood clot extending upwards on the muscles; this was carefully removed and gave rise to considerable hæmorrhage. The cavity was thoroughly cleansed and the peritoneum opened from behind. The appendix could be felt like a firm body slightly shorter than usual, it was adherent to the mesentery, the end was rough and presented the appearance of everted intestine. The appendix was brought out in the incision and ligated near the cæcum with a silk ligature, and the peritoneal surface sewed over after it had been disinfected. Then it was sewed in the peritoneum with continuous catgut suture. The specimen (Fig. 1) presented when opened one large, almost circular deep ulcer, with regular outline; at the extremity was a perforation which had destroyed the end. The lumen near the cæcum was very small, but the removed portion could easily admit an ordinary lead pencil.

The external wound was then closed over a glass drainage tube, with silk sutures to, but not including, the peritoneum, iodoform dusted over the incision, a piece of oiled silk over the same, and iodoform gauze and borated cotton over all completed the dressing.

The second day after the operation there was considerable oozing, the dressing was changed and the cavity washed out with a 1–40 carbolic solution. The pain left him after the operation and has not reappeared since. He went on to recovery, and two weeks after the operation could leave his bed feeling like a new man.

In concluding I would call attention to the small amount of pain in this case; the patient never having kept his bed only for a few days before the operation, and to the necessity of drainage in these cases.

MEDICAL PROGRESS.

THE INFLUENCE OF THE PREVAILING EPIDEMIC UPON TUBERCULOSIS.—DUJARDIN-BEAUMETZ calls attention to the fact that Grad formerly considered the influenza as a dangerous disease, more dangerous even than cholera. In view of the fact that the present epidemic has doubled or even trebled the general mortality, he believes that considerable importance should be attributed to this statement. He himself has observed a curious fact which he is quite unable to explain, viz.: that there are more than twice as many deaths among men as among women. Is it possible that this is because tuberculosis is more common among men than among women? He does not attempt to settle this question, but believes that the hypothesis finds support in facts noted by authors, especially at the present time, that the grippe is nearly always fatal to tubercular patients, the mortality among them having been considerably increased during this epidemic. The author also raises the question, "What is the subsequent history of the victims of the grippe from the point of view of tuberculosis?" Clark, in speaking of the epidemic of 1832, said that in many cases it was the point of departure for tuberculosis. Fournet made the same remark with regard to the epidemic of 1837. Brochin wrote that phthisis has often been known to develop under the influence of the grippe. Recent authors, among them Hérard, share these opinions. In view of the fact that we are convinced of the contagiousness of tuberculosis, seeing also that congestions are of frequent occurrence in the grippe, and considering finally the general enfee-

blement produced by the disease, these ideas seem to be perfectly rational. The future will show in how far they are justifiable.

In this same connection M. Cadet de Gassicourt draws attention to the statement of Bertillon that influenza is much less infrequent and grave among children. May the point of departure of tuberculosis be looked for in this direction? We know that a considerable number of young children die of this disease; it would be of interest, therefore, in these fatal cases, to study the relative influences of heredity and the grippe.

TREATMENT OF EPILEPSY.—M. CORNET (*Jour. de Méd.*) reports the results of experimentation in the use of bromide of gold, bromide of camphor and picrotoxin in the treatment of epilepsy. The bromide of gold seems to exert some favorable action in certain cases, although its action is inferior to that of bromide of potassium. No physiological difficulty is experienced in administering 3 centigr. per diem. The remedy is eliminated by the kidneys and the bromine is found in the urine very soon after its ingestion; it disappears slowly. The gold accumulates in the system, its presence having been discovered in the liver; it does not appear in the urine until it has been administered for a long time.

The bromide of camphor, the action of which in epilepsy is still disputed, does certainly possess a favorable action upon the vertigo of epilepsy, which is lessened or even made to disappear. The bromide of camphor is eliminated in the urine, the bromine in the state of bromide of sodium and the camphor in the form of derivatives.

Picrotoxin produces a favorable effect upon the epileptic seizures in the dose of 1½ to 2 milligr. Experimentally it produces epileptiform convulsive attacks. Upon autopsy the toxicity of picrotoxin is witnessed in the hyperæmia of the organs; it is also found deposited in the liver.

BRYONIA ALBA AS A UTERINE HÆMOSTATIC.—PETRESCO (*Journ. de Méd.*) finds that the root of bryonia alba possesses hæmostatic properties analogous to those of ergotine and hamamelis. As employed by Petresco 25 to 30 grm. of the dried root are boiled in 300 grm. of water until the bulk is reduced to 150 grm.; the decoction is then filtered and edulcorated. This entire amount is given in three or four doses at intervals of half an hour. Urbenu, in analyzing the root, obtained several resinous principles and glucosides in alcoholic and aqueous extracts, the therapeutic activity of which varied in intensity according to the dose, but always gave effects identical with those which have been obtained from the root itself. The glucoside possessing the most powerful action has been termed by him *bréine*, from *brêi*, the popular name borne by the bryonia alba plant in Roumania. He has given the glucoside to rabbits in doses of 20 centigrm. in 1 grm. of water (one Pravaz syringeful), and in doses of 10 centigrm. to frogs. Doses of 1½ grm. are poisonous to rabbits, while 15 to 20 grm. are poisonous to frogs. Dogs and cats bear a dose of 1.40 grm. of bréine administered subcutaneously, very well. The author has also employed aqueous and alcoholic extracts of bryonia alba, giving them in pills, potions, etc., in the dose of 1 to 3 grm. a day. With the alcoholic extract especially, in doses of from 2 to 3 grm. a day, good results have been obtained in the treatment not only of metrorrhagia, but also in epistaxis and hæmoptysis.

PROPHYLAXIS OF TUBERCULOSIS.—In a recent discussion in the *Académie de Médecine*, M. GERMAIN SÉE recalled the fact that in 1782 a law was enacted by the King of Naples which compelled physicians to declare all cases of phthisis under penalty of a heavy fine or even banishment. The effect of the same law was to send poor patients with phthisis to the hospital, the director of which was obliged, under penalty of the galleys, to set apart all clothing belonging to such patients. He was also obliged to renovate the rooms of these patients, and burn the windows and doors and replace them with new ones. Penalties was also attached to the sale of the effects of phthisical patients. Every house in which a patient died was designated as infected and thus the proprietors were often reduced to poverty. These sanitary rules were merely copies of the regulations regarding the pest. A similar law was enacted in Portugal. As may readily be imagined the law was productive of endless misery while it remained without effect in the restriction of the disease. M. Sée believes that phthisis is conveyed entirely through the medium of the sputum, and that the prophylaxis of the disease consists merely in destroying the expectorated matters. The physician then should insist upon cleanliness which is the beginning and end of prophylaxis. It is wrong to sequestrate the patient. Instead of denouncing him to the authorities as was done in Naples, instead of depicting him to his family as a repulsive infectous object, instead of tracking him as a pestilential creature, instead of dooming him to perpetual quarantine and inflicting the pains of an anticipated death, the physician should remain silent regarding the nature of the malady and calm the patient's troubled mind, especially if he has been unfortunate enough to have read the popular instructions emanating from the "Congress of Tuberculosis."

M. Sée directs attention to the fact that phthisis has become a very prevalent disease in Algiers since its occupation by the French, whereas in former years the disease was almost unknown in that country.

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SATURDAY, MARCH 8, 1890.

UNITY THE SEQUENCE OF PROGRESS.

As surely as result must follow cause, so surely will present methods of investigation lead, and that in the immediate future, to a more rapid development of medical science. Never before in its history were so many men of ability and culture bending their energies to the verification of facts already stated and to the discovery of new truths. Rich fields were all the time awaiting investigation, but until now it was impossible to enter them. Hitherto men must needs content themselves with gross appearances, and speculate with reference to that which was beyond the limit of their comprehension. But by the added means of vision, which in itself is yet to be improved, these new and hitherto untrodden fields are brought within the range of study, and fresh discoveries of untold value are being added to our wealth of knowledge every day; and each new truth but helps the more to interpret what we knew in part, and comes to serve its special purpose in the healing art. What satisfaction arises from the thought that each new fact will surely harmonize with all that went before and be as surely in accord with other truths that are to follow, and that in the final outcome, when all are properly related, medicine will as surely and as justly as any other be numbered with the exact sciences. Each truth, itself imperishable, must harmonize with every other, until they blend, at last, in one complete and perfect whole. Thus shall our science be symmetrical in form and perfect in every member.

But let us consider again the means at hand for the accomplishment of this result. By reason of new helps our vision is enlarged until that which before was hidden in mystery becomes an open book. The structures of the tissues are all before us. Cell growth reveals itself in all its forms. The morbid changes to which the various structures are subject, and the diseases incident to these changes, become more and more apparent, until we come to understand that many of them are simply the expressions of such morbid changes. Now, as not before, we can attain to a clearer understanding of the germ theory and demonstrate the presence and the forms of disease-producing parasites.

Now, too, we may command from chemistry such service as was hitherto impossible, and from our studies in the laboratory and with the microscope can turn to the investigation of diseases with the confident anticipation of determining their alternate causes.

Truths thus discovered must command universal assent. The greater their number, the more surely will men come to see eye to eye, and the more must they harmonize in their views of medical science. With a common acceptance of facts, a more perfect unity in the profession must surely obtain. This final result is logically inevitable.

The laws of chemical affinity are the same, whoever may study them. Those which govern in physiological development and in all morbid processes are, under similar circumstances, alike to all observers. They have one common language; they are unvarying in their expressions; they demand a common assent, and that common belief begets *unity*.

It is to be devoutly hoped that the days of mere theorizing are ended. As we survey the past it seems incredible that many of those theories should have taken such strong hold upon the public mind, and that they should have survived so long. Nor has their unwarranted extravagance seemed to militate against their power. This fact can hardly find more fitting illustration than in the admirable address with which the present number of THE JOURNAL opens. We commend its candid utterances to the attention of those who care to know more fully of the past history and present status of homœopathy, which

name its devotees now propose to drop, while they re-christen the child of a hundred years "The New School."

May we not hope that in the immediate future better methods of instruction based upon the sure foundations of microscopical, chemical and clinical investigations will render the promulgation of such unbounded extravagances under the guise of medical teaching, to reasonable and reasoning students, impossible.

What we most need at the present hour, and what we shall need in the future, is the bestowment of the skilled labor of those who are able to interpret correctly the morbid changes that are constantly occurring in the progress of disease. We need to know more and more surely the nature of the causes which produce them. We have no further use for theories, but we have abundant use for facts. And for the accumulation of medical truths, the times were never so propitious. Every active man in every local society is dealing with them; the State societies and our National organization are pursuing similar lines of investigation; and the International Congress only gives a still broader expression of a common purpose. In its power to disseminate medical truths, above and beyond all other agencies stands the medical press. Our exchanges are in all languages, and they come from all lands, but when they speak of what they know—not of what they think—their utterances are in harmony and command a common belief. Let then the labors of our younger men be directed along the same lines of original investigation, and the recorded experiences of older men set forth the simple facts as they are carefully observed in the progress of disease, and when, as often times we must, we still rely upon empiricism in our treatment, let us be alert to discover the reason, if possible, which governs in its use. As far as possible the teachings in our medical colleges should be verified by demonstrations. These must and will command belief. Such teaching alone will hasten the progress of medicine. Such knowledge, and such acceptance of truths imparted will beget such unity in belief and such accord in practice as can be attained in no other way.

Unity in the medical profession must and will follow, as the logical sequence of correct medical teaching.

TYPHUS FEVER IMPORTED FROM ANTWERP.

Before the days of oceanic steam transit typhus fever was much better known in this country than at present. As ship-fever, commonly brought over in sailing vessels from Ireland or England, it was too well known at our seaport towns twenty years and more ago, and many were the young medical men who lost their lives at the fever-hospitals, through attendance upon typhus immigrants and others whom these had infected. The very general adoption of steam vessels for the immigrant service has been a factor in reducing the importation of this once dreaded disease. There have not been a sufficient number of cases in our hospitals to give clinicians an opportunity to illustrate the differential diagnosis of the continued fevers. There are doubless thousands among our younger generation of medical graduates who have never been brought face to face with typhus fever, either in their student life or later. To use an every-day expression typhus is a "back number," along with old-fashioned scurvy and the still more ancient jail-fever, and so it will remain, let us hope, through the efficiency of sanitary measures on both sides of the Atlantic. But there is now in this country, a small number of these fever cases, originally brought hither from the ports of northern Europe, from Antwerp chiefly; and there are some cases that have been begotten in New York from the persons or baggage of those former cases. Two steamers from Antwerp have done the bulk of the importations, beginning their work in December last. The New York City Board of Health has given notice that the nine cases known to have occurred in that city since December 24, have with two exceptions been traced to an infection derived from certain lodging-houses in Antwerp: and a caution is at the same time given to physicians to be on their guard as to the possible springing up of cases in the houses where immigrants have lodged. The question of laxity and shortcoming at quarantine, for not preventing the introduction of this infectious disease, has been raised, but there appears to be no disposition to fasten any great measure of blame upon that office, since the incubation period of the disease may be so long that it is possible that an immigrant may have been infected on the other side of the ocean, and yet not be taken down with the fever until after his arrival in some American port. With regard

to the dispersion of possibly infected typhus immigrants throughout the country, along the lines of our railways, it may be well to utter a word of caution to our readers who chance to run across an exceptional variety of fever, especially in the person of a newly arrived alien from northern Europe; our modern facilities for rapid transportation may possibly be the vehicle of typhus to inland towns that never saw it before. One of the worst features of the case seems to be in an apparent sanitary neglect on the part of those officials on the other side of the ocean, who have allowed the fever-nests to exist so long among their immigrant lodging-houses, although due warning has been sent to them from this side. The possible typhus-infection of a steam-vessel, used for immigrants, is another question the answer to which may be evolved by the present episode; the suspicious fact being that two or more successive trips of the same vessel have been the channel for the introduction of the same kind of infection.

EDITORIAL NOTES.

HOME.

QUARANTINE AGAINST EPIDEMIC INFLUENZA IN SARANAC VILLAGE.—Dr. E. L. Trudeau writes to the *Medical News* that he has been enabled to carry out, with apparent success, a policy of protective non-intercourse against "la grippe" at his Cottage Sanitarium in the Adirondacks. Fearing that an incursion of influenza would prove disastrous to the invalids under his care at that institution, he undertook the experiment of a quarantining of the place, so soon as the disease appeared in that neighborhood. Since that time, a considerable portion of the population of the surrounding country have been attacked, but no case had occurred among those connected with the sanitarium itself, so late as February 8. That establishment is not more than a mile distant from the village, where has been a number of cases of the epidemic disease.

THE ALVARENGA PRIZE.—A medical prize fund, known as the Alvarenga Prize, is in the custody of the Philadelphia College of Physicians, and an award will be made this year, amounting to one year's income from the bequest. The prize will be given to the author of the best unpublished memoir in any department of medicine. The competition must close June 1, 1890, before which date essays may be addressed to Dr. Isaac Norris, Jr., Secretary of the College. The right to reject any or all of the proffered essays, that may be unsuitable, is reserved by the committee on award.

A PASTEUR INSTITUTE IN NEW YORK.—The *New York Medical Journal* announces that Dr. Paul Gibier, formerly of Paris, has opened a laboratory in New York City for the preventive inoculation of rabies, according to the methods of M. Pasteur. Dr. Van Schaick will be Dr. Gibier's assistant and Dr. Liautard will be consulting veterinarian.

SPECIAL NOTICE.—The next meeting of the Fifth District Branch of the New York State Medical Association will be the Sixth Annual Meeting, to be held in Brooklyn on Tuesday, May 27, 1890. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

FOREIGN.

THE BRITISH MEDICAL ASSOCIATION.—The fifty-eighth annual convention of the British Medical Association will be held at Birmingham, during the last week in August, under the Presidency of Dr. Willoughby F. Wade, senior physician to the General Hospital of that city. The Town Hall, Queen's College, and Mason College have been secured for the purposes of the sessions. The local committee on entertainment have their plans already laid for numerous excursions, and the customary evening receptions and amusements for the members.

THE BERLIN CONGRESS.—Dr. William Goodell, of Philadelphia has been invited by the Gynæcological Section of the Tenth International Medical Congress, which is to be held in Berlin during August of this year, to open the discussion on the Induction of Premature Labor by a paper on that subject.

GERMAN UNIVERSITIES.—The total number of matriculated students in the twenty-one German universities in the current semester is 29,007 as against 29,491 last summer session. Berlin stands first with 5,731 students, Munich second with 3,479, Liepzig third with 3,453, Halle fourth with 1,657, Rostock stands last with 346 students. The medical faculties have the largest attendance, the total number of students in them this winter being, 8,714.

TOPICS OF THE WEEK.

THE HYDERABAD CHLOROFORM COMMISSION.

The second Hyderabad Chloroform Commission has ended its labors, and our contemporary, the *Lancet*, in its issue of the 18th of January, gives a summary of the work done and of the conclusions arrived at. As in the case of the former Commission, Surgeon-Major Lowrie presided; but the important fact in the present Commission was the presence of a representative of the *Lancet*, Dr. T. Lauder Brunton. The experiments were conducted with the utmost care, and every precaution that scientific knowledge and familiarity with the details of vivisection could devise were adopted to insure freedom from error either in the performance of the experiment or the conclusions drawn from it. The liberality of his Highness the Nizam of Hyderabad had secured all the necessary scientific apparatus and accommodation, so that the labors of the investigators of the merits or demerits of chloroform were facilitated in every way.

The history of the great work just completed is of more than passing interest. All practical surgeons know that for some ten or twenty years past the London schoolmen and their brethren in the New England States of North America have been not only warmly advocating the use of ether as the best general anæsthetic, but they have denounced with energy the use of chloroform. Amongst the most influential and able of the partisans of ether was the *Lancet*, which was unsparing in its denunciation of chloroform, and its influence with the profession was so great that surgeons using chloroform as their routine anæsthetic did so at considerable personal risk. Chloroform was on the defensive, and everything seemingly offered an easy victory for the advocates of ether when, in 1887, Dr. Reeve, of Dayton, U.S.A., in a contribution to the *Medical News*, asserted that the inhalation of ether "in the human subject may cause death as suddenly, as unexpectedly, and in the identical manner that chloroform does." To openly publish such an heretical opinion in the New England States required more than the average amount of moral courage, and, as might be expected, the opinion was promptly denounced. Dr. Packard, of Philadelphia, said that sudden deaths under ether almost invariably occurred in patients who were previously enfeebled by age, loss of blood, by exhausting disease, or by the results of injury which had already weakened their hold upon life; while in a large proportion of the cases of sudden death under chloroform it occurred in healthy subjects, without loss of blood or dangerous lesion. The war of words recommenced, and the "etherists" were further aggravated by a very valuable paper by Dr. Stroud, which appeared in *Daniel's Texas Medical Journal*, drawing attention to the beneficial effects of chloroform inhalation in cerebro-spinal meningitis.

A special meeting was held in the New York Academy of Medicine to consider the relative merits of the different anæsthetics, and Dr. Gerster tried to reconcile the etherists and chloroformists by pointing out that, in their proper spheres, they were both useful; but the opponents were not to be reconciled, and the etherists, on the declaration of Dr. Knapp, of New York, of his conversion to the use of ether, were generally considered to have secured a victory. Southern American surgeons now felt called upon to state the grounds for their preference for chloroform, and in October, 1887, Dr. Hunter M'Guire, of Richmond, Va., read a paper, "The Choice of General Anæsthetics," before the Medical Society of Virginia, in which he gave an account of his great experience with chloroform whilst Medical Director of the famous "Stonewall" Jackson Corps, Army of Northern Virginia, C.S.A. His enormous total of 28,000 consecutively successful chloroformizations could not be either ascribed to chance or ignored; neither could it be asserted that a drug was inherently dangerous which could be freely administered without a death to 28,000 consecutive patients, very many of whom, as was the case with their great leader, had, prior to inhalation, suffered enormous loss of blood, and the great majority of whom had suffered privations and hardships, and undergone fatigues that have made their corps immortal. In the same year Dr. Julian J. Chisolm read before the Baltimore Academy of Medicine his papers, "Chloroform, the Best of Anæsthetics," and "A Very Valuable Lesson for Those Who Use Anæsthetics"—papers telling of his 10,000 successful administrations of chloroform as both a military and a civil surgeon.

At home the question was very pronouncedly brought before the profession and the public by a philippic in the *Lancet* of September 15, 1888, against the use of chloroform, in which, commenting on the death of six patients whilst under chloroform anæsthesia, our contemporary hysterically demanded—"Was there any reason why ether could not have been used instead of chloroform?" In the following issue the journal contained a letter from Mr. Foy, whose series of articles on "Anæsthetics" were then commenced in our pages, in which he protested against the tone of the *Lancet's* leader, and argued that it was not the part of a scientific paper to raise a popular outcry against a valuable medicinal agent—one which he considered to be the best anæsthetic we possess. He stated that the greater number of deaths under chloroform narcosis were due to faulty administration, and therefore avoidable. The letter called forth a reply, and produced a considerable amount of correspondence. The very positive assertions of the *Lancet* on the danger of chloroform finally brought a letter from Surgeon-Major Lawrie, stating that he had had 50,000 chloroformizations done under his charge without the loss of a single life, and the very important announcement that his Highness the Nizam of Hyderabad had authorized him to place £1,000 at the disposal of the *Lancet* for the purpose of defraying the expenses of a representative from that journal to examine, with the scientific experts of Hyderabad, the properties of chloroform as an anæsthetic. Dr. Lauder Brunton was selected, and the Commission is over. The experiments were such as should satisfy the most exacting. To quote the *Lancet:* "The experiments were of two kinds; those of one group being made without recording apparatus, and being intended to ascertain what influence is exerted by various conditions upon the

relation between the stoppage of heart and of respiration, and the limits within which artificial respiration and other means of resuscitation are useful.

"The second group consisted of experiments with recording apparatus, and were made for the purpose of ascertaining the effect of various conditions upon the heart and blood pressure." Chloroform was given in all sorts of ways, with the invariable result that the respiration stopped before the heart. The Commission drew up four teen practical conclusions, which may be summarized as follows: The recumbent position on the back and absolute freedom of respiration are essential. Tight clothing of every kind should be avoided. An apparatus is not essential. A convenient form of inhaler is an open cone, or cup, with a little absorbent cotton inside at the apex. At the commencement of the inhalation care should be taken, by not holding the cup too close over the mouth and nose, to avoid exciting, struggling, or holding the breath. As a rule, no operation should be commenced until the patient is fully under the influence of the anæsthetic. The administrator should be guided as to the effect entirely by the respiration. If breathing becomes embarrassed, the lower jaw should be pulled or pushed from behind the angles forward. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation. Suspended respiration is to be treated by artificial respiration and lowering the head. They add that "the Commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

It is very gratifying to us to see such a clear and unequivocal confirmation of the views on the safety and value of chloroform so recently put forward in this journal by Mr. Foy; and we would particularly draw our readers' attention to the practical identity of the rules drawn up for the administration of chloroform by Mr. Foy and by the Commission. There is occasion neither for addition to the rules as they appear in "Anæsthesia, Ancient and Modern," nor for alteration in them. When Mr. Foy's views on chloroform were published, ether was the favorite anæsthetic; and in formulating rules for the administration of an unpopular drug, the author of "Anæsthetics" had much professional prejudice to contend against. Now that the most carefully conducted series of experiments that have, perhaps, ever been made in practical therapeutics so fully confirm the correctness of his opinion, we have little doubt that his book will become the most popular monograph on anæsthetics with both students and practitioners.—*Dublin Journal Med. Sciences.*

TOO MANY LECTURES.

We have adverted before to the growing custom among our most advanced schools of medicine of substituting for the large number of didactic lectures formerly given, practical work of various kinds. The time will come when laboratory work will be first, and lectures merely supplementary, instead of *vice versa*, as at present. Many years ago, when physicians had from one to five students under them, the instruction was almost wholly practical—crude 'tis true, yet practical. Then, with the multiplication of schools, the pendulum swung to the other extreme; but now it would seem that the tendency is towards the "golden mean."

Canada is also waking to the necessity of less lectures, and several of its schools have already made radical changes in the curriculum. The faculty of McGill University, however, though desiring to modify its curriculum by substituting practical work for many of the lectures now given, is handicapped by the Ontario Medical Council, which refuses to permit of any changes.

Dr. MacDonnell, in the opening address this Fall, says to the students: "The excessive time devoted to didactic lectures is the worst feature in our Canadian system of medical education. There is no country in the world where so many lectures have to be attended. When your brain is weary with much listening, your fingers cramped with note taking, your ischial tuberosities worn away from much sitting, do not entertain hard feelings against the Faculty, but remember the provincial boards." *Times and Register.*

THE FATE OF PATHOGENIC MICRO-ORGANISMS IN DEAD BODIES.

Dr. E. v. Esmarch (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) finds that there is a comparatively rapid disappearance of the pathogenic microörganisms from the dead bodies of animals who have died of bacterial diseases. His experiments also show, where the dead bodies are placed in water or buried, that the water or earth surrounding them does not become infected. In the case of anthrax, substantiating the observations of Feser, he finds that the bacilli die out very rapidly from the dead bodies of the host.

That this disappearance is not due alone to the crowding out of the pathogenic bacteria, by the microörganisms of putrefaction, is shown by preserving tissues, containing pathogenic bacteria from dead animals, antiseptically. In this case the pathogenic organisms disappear; but it is true they remain present longer than where they are made to contend with the putrefactive bacteria.

E.'s conclusions, in accord with nearly all German observations, are that the proximity of cemeteries, and the drainage and ground water from the same, have no effect upon the spread of epidemic disease.—*Medical News.*

TRANSPLANTING TUBERCULOSIS.

The State Board of Health of California has been greatly exercised over the danger to which it believed the State is exposed through the immigration of a large number of persons suffering from tuberculosis. It even suggested, in a recent bulletin, the advisability of establishing a strict quarantine against consumptives until measures of isolation and disinfection could be undertaken. The daily press of San Francisco has not been slow to take up the question, and the result has been a scare and sensation of such magnitude that even the proposed prize-fight has been for the moment forgotten.—*Medical Record.*

PRACTICAL NOTES.

AMENORRHŒA CURED BY FRIGHT.

Dr. E. T. Collins reports in the *British Medical Journal* the following case of re-established catamenia, resulting from a profound mental impression, namely, fright by a tramp: A healthy, robust girl, unmarried, aged 35 years, suddenly ceased to menstruate, two and a half years ago, without apparent cause. No suspicion or indication of pregnancy was present. She did not complain of any subjective symptoms, except monthly, when slight headache, backache, and malaise were felt for a few days. Medical treatment gave no results. Last June, returning in the evening from a country walk, she was suddenly alarmed by a tramp on the roadside. The catamenia commenced that evening, and has continued normal at the last three periods.

CODEINE IN OVARIAN PAIN.

Dr. Freund, of Strassburg, has recently used codeine in a large number of cases of abdominal pain from various causes, with the view of testing the assertions of Dr. Brunton that the drug is of especial use in intestinal or pelvic pain. His results seem to indicate that Brunton's views are somewhat exaggerated.

Pain from acute uterine affections, such as dysmenorrhœa, Freund found, was not as quickly relieved with codeine as with morphine, and the relief was of shorter duration. In pain from pelvic exudates and tubal disease the drug was also of but little value. In ovarian pain, however, whether from prolapse, oöphoritis, perioöphoritis, or neuralgia, the relief afforded by codeine was prompt, unmistakable, and more or less permanent even when small doses were given. The amount usually administered was about half a grain three times daily in pill form, and in but few cases was it necessary to increase this quantity. His experience coincides with Brunton's that no disagreeable or harmful effects follow the use of the drug. It does not stupefy, diminish the appetite, nor constipate. He prescribes the pill for one month after an attack of ovarian pain, and warmly recommends the drug for the above conditions.- *Therapeutische Monatshefte*, November, 1889.—*Medical News.*

GERMICIDES.

A series of experiments have been carried out with a view of ascertaining the smallest quantity of any antiseptic substance which is capable of preventing the development of the bacillus of typhoid, cholera, and tuberculosis. The culture of the typhoid bacillus was prevented by 1 part of corrosive sublimate on 20,000 parts culture medium, one part of sulphate of quinine on 800 of culture medium, 1 part of carbolic acid on 200, 1 part of hydro-chloric acid on 105 parts of chloride of lime on 100 parts of culture medium. The cholera bacillus (coma bacillus of Koch) will not develop in an acid medium. One drop of a one-per-cent. solution of hydrochloric acid prevents it. Its development is also prevented by 1 part of corrosive sublimate on 100,000 parts of culture medium; 1 part of sulphate of quinine on 5,000 parts, 1 part of sulphate of copper on 500 parts, and one part of carbolic acid on 400 parts of the culture medium. Many substances such as salol, ether, chloroform, fluoride of sodium, iodoform, etc., hinder remarkably the culture of the bacillus of tuberculosis, but those which sterilize the culture medium of this bacillus completely are hydro-fluo-silicic acid, ammonia, fluo-silicate of iron, fluo-silicate of potash, polysulphide of potassium, and silicate of soda.—*American Prac. and News.*

THE TREATMENT OF NÆVUS BY COLLODION.

At a recent meeting of the Midland Medical Society of England, Mr. Thomas showed three cases of nævi treated by the application of collodion—one in the back, another in the parotid region, and a third over the anterior fontanelle in a young infant. Collodion was painted over them and the skin in the vicinity, the application being usually carried out by the mother. In all considerable improvement had resulted, rendering further treatment by operation unnecessary. He pointed out the absolute freedom from risk or danger, and the advantages it offered in some situations where almost all methods were unsafe.—*Birmingham Medical Review.—Medical News.*

PRECAUTIONS TO BE OBSERVED IN PERCUSSION.

Probably many good ausculators exist for one good percussor. The note obtained in percussion is often very complex and difficult of analysis, the more difficult being of short duration. Pitch and quality are hard to separate. Moreover, percussion is usually badly taught by instructors. Not to weary you with the well-known advice regarding the mode of striking a quick blow, I wish to call attention once more to the great need of comparing the results of lighter and heavier blows, and also of examining the patient standing, and with the body naked when possible. I wish also to emphasize the value of the much-neglected study of the sensation conveyed to the finger used as the pleximeter. By this finger the sensation of resistance will often give a better idea of the level of fluid than the ear. In children's chests the sensation is of especial value, since their elastic chests often give notes from both sides. It is, moreover, remarkable what slight differences of pitch and quality may thus be appreciated.—J. W. Roosvelt, M.D., in *Medical Record.*

SOCIETY PROCEEDINGS.

New York County Medical Association.

Stated Meeting, February 17, 1890,

THE PRESIDENT, GEORGE T. HARRISON, M.D., IN THE CHAIR.

PRESIDENT'S ADDRESS.

Dr. Harrison, Vice-President, on assuming the position made vacant by the death of Dr. Charles S. Wood, made an address, which was in part as follows:

Charles S. Wood is no more, and in his death this Association has received an irreparable loss. But a month has passed since your suffrages called him to this presidential chair for a second time. Few of you who then saw him imagined that they should never behold his noble and serene countenance again. He was urged by those bound to him by the closest ties of love and affection not to go to that meeting, as he was visibly failing in health and symptoms of a threatening character had manifested themselves. But such was his devotion to the interests of this association that he felt that he must be present, cost what it would of personal sacrifice.

With fond anticipations he looked forward to this occasion, when in his address he would tell you in eloquent terms what this association had accomplished in the last twelve months, and in burning words would unfold his hopes and aspirations for its future welfare. But it was not to be; his work on earth was done. The language which Carlisle applies to his father is singularly appropriate here. "As for the departed," he remarks, "we ought to say that he was taken home 'like a shock of corn fully ripe.' He had finished the work that was given him to do, and finished it (very greatly more than the most) as became a man. He was summoned, too, before he had ceased to be interesting—to be lovable." . . . .

If we follow his career from boyhood to its closing scenes it will be found that he discharged the duties of life with rare fidelity. Whether we consider him as scholar, teacher, surgeon in the field in war-time, or in the "piping times of peace," as active practitioner or presiding officer of a scientific body, alike in all circumstances, he was industrious, faithful and upright. Dr. Wood had an eminently judicial mind, and this, with his extensive knowledge of parliamentary law, rendered him remarkably well qualified for the duties of a presiding officer. He was singularly free from all affectation, and had a healthy, well-balanced mind. He was very decided in his convictions and expressed his opinions fearlessly, but there was no bitterness in his judgments. With special predilection he devoted himself to the study of surgery, physiology and medical jurisprudence. . . . . He was a man of modesty and true dignity. Above all, religion was his pole-star, and kept him true in all the distractions and vicissitudes of life. "*Extinctus amabitus idem.*"

A retrospective glance at the work done by our association during the past year affords abundant proof of gratifying progress. In this time we have added 183 new members, making our roll number 480 names at the end of the year. A number of excellent papers have been read before the association, and the discussion upon them, as a rule, has been marked by thoroughness and earnestness. The large attendance upon the meetings fully attests the interest of the Fellows. The report of the Treasurer, too, furnishes tangible proof in another way of the continued interest of the Fellows in the success of our organization. Let not this success be an inducement to supineness, but, on the other hand, let it be an incitement to put forth greater effort to increase the power and usefulness of this association.

THE DEATH OF DR. WOOD.

The following resolutions were adopted:

Resolved, That by the death of our President, Dr. C. S. Wood, our association has been deprived of one of its earliest and most valued members—one whose constant presence rendered its labors more efficient and whose counsel warned against many dangers.

Resolved, That his industry and zeal were always an example to us, his contributions to the work of the association of a high order, and, further, that his deportment dignified its objects.

Resolved, That in tendering our condolences to his family we trust that their grief may be tempered with the remembrance of his many excellent traits and abundant virtues.

THE LATE DR. LEWIS HALL SAYRE.

The following minute was also adopted:

The sadly sudden death of Dr. Lewis Hall Sayre enrolls another name in the memorable list of those who have nobly laid down their lives in devotion to the duties of our profession.

In the very flower of early manhood the brilliantly promising career opening before him is closed in this world by an act of self-sacrifice as heroic as aught that history tells of warlike prowess. The call to relieve another's suffering found him regardless of his own, and, thinking only of the good deed to be done, he perished in its unselfish doing.

No greater meed of praise can earthly chronicle record than that a man so honored his high office as to give his life for it, no better assurance of the heavenly welcome to a good and faithful servant.

This Association, to the expression of its own grief at the loss of an associate whose qualities of heart and mind commanded affection and re-

spect, desires to add its profound sympathy with those who are bereaved of the son, brother and husband in whom their loss and pride were justly centered.

INTERESTING SURGICAL CASES.

Dr. T. H. MANLEY presented two patients upon whom he had recently operated. The first was an infant, six months old, who had had an undescended testis. He opened the canal and brought down and secured the testicle, and the result had been very satisfactory. This was the second case of the kind, he said, in which he had operated. The second patient was a young man who had been injured in the head by the accidental discharge of a parlor rifle. The ball had entered near the left superciliary ridge, and an incision was made at this point. The ball, which was found just over the sphenoid fissure, was extracted, and it was ascertained that the orbital plate of the frontal bone was shattered. Four or five fragments of bone were removed, but the eye was preserved. No cerebral symptoms whatever had developed, and the recovery, which had been very rapid, was now complete, with the exception of some slight disturbances of vision, which it was hoped would, ere long, disappear.

A paper by DR. EDWARD VON DONHOFF, on

THE RADICAL CURE OF HERNIA,

was read by Dr. Milliken, Dr. von Donhoff having been suddenly called to Europe.

The curable variety of hernia, *par excellence*, aside from the anatomical situation of the lesion, the writer said, was that which occurs in the young and robust, and is presented in its recent condition for treatment. Among the cured were a few instances of spontaneous recovery, and it was more than probable that many of those seemingly aided by orthopædic apparatus would have progressed quite as well without it. In other cases nature brought about a safe condition for the subject of hernia, because the sac, being small, was confined to a narrow space, and, becoming firmly adherent and greatly thickened, afforded a more reliable safeguard than any mechanical adjustment that has as yet been devised. Very rarely had he known strangulation to occur within a sac of this description, and he said that if he should meet with such a case in the future he would content himself with relieving the stricture and (instead of amputating) endeavoring to bring about union at the point of necessary incision of the sac.

The only two good reasons for operative interference were (1) the existence of strangulation of the contents of the sac, or incarceration not relievable by taxis, etc., and (2) a dangerous condition growing out of causes other than strangulation, such as hæmorrhage into the sac, suppuration of the sac or its contents, or great size and cumbersomeness of the mass amounting to not merely a mechanical disability, but a menace to the patient's reason or life. Whenever a subject of any description suffering from strangulation or any other mischievously suggestive condition was presented for operation, an attempt should be made at radical cure, except when atrophic changes existed in the structures which it was necessary to unite. In nearly all cases it would be necessary to apply a ligature and amputate the sac, or, preferably, amputate and nicely join with numerous sutures the edges of the lumen. If the sac, however, were quite small and of normal appearance, it should invariably be returned intact, unless the treatment of its contents required an incision into it.

He believed that any method of treatment which involved the direct or indirect massing together of a heterogeneous collection of tissues, regardless of their histological peculiarities, would necessarily be attended with failure, and he said that he made this criticism with less hesitation from the fact that some years ago he reported a series of thirty-four cases in which the method pursued had similar technical faults. All of these which he had been enabled to follow up after the operation had been marked by a return of the hernia, after a very deceptive apparent cure, in a more formidable character than before. In this series of cases the *modus operandi* was as follows: The sac, having been exposed, was cut off close to the ring and the remaining lumen was closed by a sufficient number of sutures so placed as to include all overlying structures and the pillars, as well as the stump of the amputated sac. A number of auxiliary retention sutures completed the operation.

The causes of failure in these cases he believed to be: 1. Apposition of heterologous tissues. 2. Consequent abnormal cicatrization. 3. Resorption of effused plastic material and deciduation of tissue strata. 4. Recurrence of the extrusion because of the disappearance of the temporary support afforded by the semi-organized plastic mass plugging the lumen of the sac and developed as a part of the healing process, but now no longer continuous with the tissues which had become deciduated. After the operation he had made the mistake of furnishing most of the patients with a light truss, and he could not now but regard this as having had a most injurious effect upon the new cicatricial connective tissue formations. Eleven of the cases he had the opportunity of observing for a longer time than the others, and among these the average duration of apparent recovery was less than three months. In the remaining twenty-eight the time was probably much shorter, since they were individuals exposed to the dangers of severe physical exertion.

As to the McBurney operation for the radical cure of hernia, he had had the opportunity of in-

specting the case-book of the outdoor department of the Hospital for Ruptured and Crippled, and so was enabled to speak with some degree of accuracy of certain results following this procedure therein recorded; although, of course, he could not estimate from this the proportion of failures in the total number of cases operated on. Having briefly described Dr. McBurney's operation, he said it was evident, from the results he had seen, that no fixed massing of tissues occurs between the pillars. As soon as this resorption was perfected the possibility and probability of the recurrence of the extrusion would be established. In the instances in which the cicatricial formation was scant, the prospect of immediate failure was greatly enhanced. It was relatively a piece of good fortune if permanent closure of the lumen of the ligatured and amputated sac was secured, and thus the possible added danger of a gut extrusion lacking that covering avoided.

No direct effort at closing the intercolumnar space was prescribed by the operation technique, unless the auxiliary sutures were so regarded. A not too remotely possible danger was complete disruption of the cicatricial barricade, especially if the mass should be subjected to much adventitious pressure by trusses, etc. It might also happen as an acute accident immediately following the recovery from the operation. He did not know that such an occurrence had been met with in any instance in which the McBurney operation had been done; but it was a perfectly rational possibility attendant upon any method looking for repair of the hernia breech and operation wound to a granulation process, and not directly contemplating the closure of the intercolumnar, or a similar, space by a close and permanent approximation of homologous physiological tissues.

The next portion of the paper was devoted to a description and condemnation of Dr. J. D. Bryant's operation, the special feature of which is the platting of the sac, from side to side, through a number of longitudinal slits made in the columns. In closing Dr. von Donhoff said that in such cases of inguinal hernia as were modified by very large openings, he had suggested a subcutaneous relaxation incision through the abdominal muscular planes (external and internal oblique muscles), for the purpose of permitting easy approximation of the edges of the ring after the necessary paring of the edges of the gap. He knew now that Bergmann, Esmarch, and other German surgeons were practicing a similar manœuvre; but, despite even this resource, in a certain proportion of this class of subjects any plastic operation must fail, because of the widespread character of the atrophic changes present.

Dr. W. B. De Garmo said that when the McBurney operation was first introduced he had very little faith in its efficacy; but he was free to confess that he had been surprised to see how many good results were reported from it. At the same time, he was still of the opinion that even this operation was not destined to have a long life, and he believed that eventually it would be found to be attended with as many failures as those which had preceded it. His experience confirmed that of the author of the paper as to the great difficulty of properly adjusting mechanical appliances in cases of operation where the hernia had afterwards returned. The paper was unsatisfying in that it left the whole subject very much where it was before. In the treatment of hernia he himself had perhaps had as much experience as any one in the country, and the only reason that he did not advise operation was because he had no faith in such a procedure resulting in permanent cure. He did not wish to be understood, however, as opposing an operation in all cases. There was one class of cases in which he would advise it, viz.: irreducible hernia; provided the patient were in suitable condition. But to operate in cases in which the hernia could be readily returned and could be kept up in position by a truss he did not believe was justifiable.

The operation which for the last two years he had himself employed in cases where operative interference was called for was that of Barker. He did not believe that anything was gained by destroying tissues, even if they were poor tissues, and he had selected this operation for the reason that if it did not prove successful it would not leave the patient in a worse condition than he was before. It consisted simply of clearing the canal of all foreign bodies (whether omentum or anything else), and then closing the canal; the external wound being closed by first intention. The healing process was rapid, and was usually completed in ten days.

Dr. Charles McBurney said that the actual cause of hernia, and that which acted continuously in keeping it up when once started, was the natural peritoneal pouch. This existed in almost every individual, and it led to a natural deposit of the intestines, and pressure therefrom, at that point. In operating in cases of hernia where such a procedure was called for his aim had been to get at the root of the evil, and to operate in such a way that the original conditions causing and maintaining the trouble should be removed. The tissue between the pillars on which so much stress had been laid in the paper was a myth which had been bothering surgeons for many years. It was absurd to expect to cure a hernia by simply fastening up the bottom of the sac at the external ring, which was situated a considerable distance below the real seat of trouble. If we wanted to effect a cure it was essential that we should remove the pouch entirely, for if the operation involved only the external ring we left the whole of the neck of the sac in the canal, extending up to the internal ring.

He could not see why Dr. von Donhoff should put back a sac simply because it was small. A small sac was liable to become a large one, and to involve the patient in the greatest possible danger. It was very evident to his mind that the one great reason why, in all the thirty-four cases referred to in the paper, there had been a relapse within three months, was because in all of them the operation was at the external abdominal ring. The explanation was simple. A portion of the sac was left; and just as sure as any part whatever of the sac remained, just so surely was it liable to become enlarged and give rise to a recurrence of the hernia.

The main idea of the method with which his name was associated was to get rid of the sac at the very highest point and to absolutely obliterate it. This had the effect of reducing the peritoneal lining at the internal abdominal ring to a level with the rest of the peritoneum, and thus did away with the tendency to pouch at this point. In order to give the requisite support from below he had endeavored to blend together, by a cicatricial process, all the tissues in the canal in the most thorough and complete manner. In the notice of his operation in the paper one very essential point had been entirely omitted. This was the drawing together of the skin and subjacent tissues to such an extent that a space only about ⅛ of an inch was left; that is, the smallest space that would admit the packing of iodoform gauze. The effect of this gauze packing was to secure healing from the bottom of the wound, and the process was purposely slow. The result was a very dense and strong cicatricial tissue.

He should be very unwilling to claim that this operation was an infallible cure for hernia. As to the cases of it referred to in the paper as failures, he did not know who had been the operators or anything about the circumstances connected with them; and Dr. von Donhoff's statements were certainly very vague and indefinite concerning them. He had himself seen some relapses, but they were exceedingly few, and in all the cases except one the relapse could be fully accounted for by certain existing circumstances which imperiled the success of the operation. But even if there had been other relapses, with which he was at present unacquainted, he would still believe that the principle on which the operation was based, to strike at the root of the trouble, was sound. The probabilities were that we should never have an operation which would make an individual better than he was originally, and he did not think a procedure could be devised which should be absolutely free from recurrences. In closing his remarks Dr. McBurney exhibited five patients in whom his operation had been followed thus far by brilliantly successful results. Most of the cases were of two years' standing, and in two of them there had been a double operation.

DR. T. H. MANLEY said that during the past year he had performed the McBurney operation seventeen times, in all sorts of cases and on patients ranging from 73 years to less than 73 days old. Two of the patients had died, but they were in fact moribund at the time the operation was performed; and in all the others the result was perfect up to the present time.

DR. A. P. DUDLEY said that the secret of Dr. McBurney's great success was that he went beyond other surgeons, and cut off the sac at the internal ring. The failure in many operations he believed was due to the fact that the operation was delayed too long. When a hernia was allowed to remain for many years the pillars of the ring were apt to become enormously dilated; and the difficulty of operating thus became very greatly enhanced.

When the discussion was concluded Dr. N. G. Bozeman exhibited an ingenious apparatus for the irrigation of deep cavities.

NECROLOGY.

A Tribute to the Memory of Dr. Charles S. Woods.

Report of a special committee to the Society of Medical Jurisprudence and State Medicine:

It becomes our painful duty, as a committee appointed by the Board of Trustees, to announce to the Society the loss of one of its most prominent members, and one of its founders, in the death of Dr. Chas. S. Wood. To those of you who remember the early history of this organization, the causes which led to its foundation and who recognized its early struggles for success, it is needless to mention the deceased as one of those energetic men to whom that success is in a great measure due. His gentle and suave manners helped to expedite the completion of the work, planned and conceived by a few whose ideas of right and liberty were totally at variance with the devious and irreconcilable practices of the officers of the parent Society, whose offspring though we unfortunately be, yet we have outstripped in the race for the promulgation of scientific facts and data. Of that parent, Dr. Wood was one of its most hard working members and become by his worth and endeavors one of its most honored Presidents. Always striving to do right, he expected truth and honor to be the motives of all, in the work to which his time and energies had been devoted. When he recognized that this work in others was but subsidiary in them to the purpose of a personal aggrandizement he with others animated by his own sense of honor rebelled, and sought to find in this Society a field for the investigation of scientific

facts untrammeled by parliamentary bickerings and personal quarrels.

Although he persistently refused all offers of office, he took a keen interest in all matters relating to the Society's good and was a worker in the administration of its affairs. Had he lived longer he would have been compelled by his friends to have accepted the highest office which it is in the power of this Society to bestow.

Not only was his voice heard on all questions of policy but he was ever prepared to speak on the scientific subjects which were brought before us. We all remember his modulated, melodious voice harmonizing so well with his gentleness of character, and shall miss his ready argument and quiet humor.

Our loss cannot be replaced and, though forgetfulness is ever the attendant of those busy with their own aim in life, Dr. Wood will ever live in the remembrance of those, however occupied, who called him colleague and friend.

Dr. C. S. Wood was born in Litchfield, Conn., on the 27th day of February, 1825. After having taught school for a time he was graduated from the Jefferson Medical College of Philadelphia as a Doctor of Medicine. He entered upon the practice of his profession in Greene, Chenango Co., N. Y. When the war broke out he offered his services to the Union and was commissioned as Asst. Surgeon in the Sixty-sixth New York Regiment, and later as Asst. Surgeon U.S. Volunteers. After having served in all the battles of the Potomac until the time when Grant took command, he was transferred to the Staff of Gen. Wright and proceeded to San Francisco. The general hospital of the Presidio at that place was under his charge, and at the end of the war he was ordered to Alcatraz Island in San Francisco Bay. Soon after this he returned to New York (1867), and has made his residence here ever since.

Such in brief was the life history of the man who was one of the most earnest of our Society. Conservative, and yet ever ready to adopt reasonable innovations, he could not be moved from the path which reason and personal experience told him to be right. He was made of so firm a mould that one could ever rely upon his taking the side of truth and justice even when every other interest was opposed. In him we have lost so firm a support that our expression of condolence to his family is but an insufficient tribute to his worth, and the following resolutions, which I hope the Society will take the necessary steps to adopt, to have spread on the minutes, and to have transmitted to the deceased member's family, are inadequate utterances of our loss. No more will his genial face be seen in our midst; of him we have but the memory, yet his work will live.

Be it by the Society of Medical Jurisprudence and State Medicine

Resolved, That in the death of C. S. Wood, M.D., this Society has sustained a loss whose weight falls heavily upon us, a loss which never can be replaced. Be it

Resolved, That this Society recognize the probity and purity of the deceased, who was ever watchful of our affairs, who aided us with his judgment, and taught us from his wide experiences. Be it

Resolved, That the science of medical jurisprudence is deprived, by the death of Dr. C. S. Wood, of one of its ablest votaries and brightest lights, of a man of eminent abilities and stern integrity.

N. E. Brill, M.D.,
E. C. Spitzka, M.D.,
A. M. Jacobus, M.D.,
Committee.

Charles B. Goldsborough, A.M., M.D.

Dr. Goldsborough, Surgeon, U. S. Marine-Hospital Service, was born at Elkton, Cecil County, Md., December 10th, 1850. After a preparatory course at a classical school in Baltimore and at the Episcopal Academy in Philadelphia, he entered the classical department of the University of Pennsylvania in 1868, and was graduated in June 1872 with the degree of B.A. Besides being the orator of his class, he was subsequently appointed instructor in Latin and Greek at the Episcopal Academy. About this time Dr. Goldsborough entered the medical department of his alma mater, and was graduated with honor March 10th, 1876. He now received the prize for the best class essay, the subject being salicylic acid, and also the Hodge gold medal for the best record in the dissecting room. He was then appointed assistant demonstrator of anatomy at the University, and was elected a member of the Pathological Society. In April, 1876, he received the appointment of resident physician in the Episcopal Hospital, Philadelphia, and served the full term of sixteen months. On the completion of his tour of service at the hospital Dr. Goldsborough appeared before the examining board of the Marine-Hospital Service, and passed first in a large class of applicants. He was appointed Assistant Surgeon, September, 1877, Passed Assistant Surgeon, October, 1880, and Surgeon, September, 1886. He served at various stations, on special duty at Washington and elsewhere to 1879. At Baltimore from 1879 until March, 1882, next as Surgeon in Charge, at Mobile, Alabama, to October, 1885. From this date until February, 1888, he was in charge of the Marine-Hospital at Chicago, Ill. His final service was in charge of Marine-Hospital, New Orleans, where he died in harness, of heart failure, January 5th, 1890.

Dr. Goldsborough was a most efficient officer, thoroughly alive to the interests of the service in

every department. An excellent surgeon and well trained in hygiene, his great talent and experience produced a combination invaluable to the service.

His comrades regret his loss, and may well emulate his record. F. I.

ASSOCIATION NEWS.

The Annual Meeting at Nashville, May 20.

By special resolution the Permanent Secretary was appointed to obtain rates an all the lines of travel to Nashville. In order to have some basis upon which to make these arrangements it is necessary that he should be informed as to the number of those who may wish to avail themselves of this opportunity and also the roads or lines over which they must reach Nashville. Therefore, delegates and members are urgently requested to inform the undersigned at the earliest moment.

From the present advices it is believed that reduction of the rate will be sufficient to induce a very large attendance.

WM. B. ATKINSON, M.D.
1400 Pine street, Philadelphia, Pa.

Report of the Committee on Foreign Transportation.

To the Editor:—The Committee on Foreign Transportation have finally arranged as follows:

The Netherlands-American Steam Navigation Co. being the only line that would allow any reduction sufficient to be worth mentioning and on times of sailing suitable for our delegates agree to give us transportation to Boulogne, France, or Rotterdam, Amsterdam, Holland, from New York and return for $90 in first-class rooms inside or $105 outside, this *only* to *our own members* and *their families*.

Sailing from New York in May, June, or July as follows:

May 1st, 8th, 15th, 22nd, 29th, June 5th, 12th, 19th, 26th, July 3rd, 10th, 17th. Berths for May steamers must be engaged before April 15th; June, by May 1st; and July by May 15th. After these dates the company may dispose of all berths on said steamers not engaged. Of course those who secure berths first get the best places. All the steamers are alike in first-class accommodations.

For those who desire it, free passage will be granted from Rotterdam, Amsterdam via Flushing Queensboro' to London on the outward trip. The boats running between Flushing-Queensboro' carry the mail of Northern Europe to and from Great Britain. This route is the most direct and favorite one from London to Berlin, and the steamers are all elegantly furnished. There is a day and night service, the boats running in the night all have state rooms.

For reserving berths on the steamer from New York a deposit of $10 each person is required. The balance of the passage money must be paid at least two weeks prior to sailing.

These steamers cross in eleven to twelve days, some do it in less time.

Railroad fare from Rotterdam to Berlin, 1st class $13.60; 2nd class, $10.40; Amsterdam to Berlin, 1st, $13.70; 2nd, $10.50. Boulogne to Paris, 1st, $6.00; 2nd, $4.50.

The table and attendance on the steamers to be of the best.

Efforts are being made to obtain a reduction in the railroad fares as above. This will be announced in the JOURNAL as soon as obtained.

(Signed) WM. H. PANCOAST, Ch'm. of Com.
W. B. ATKINSON, Sec'y.

Those who have already notified the secretary of their intention to go to Berlin will in due time receive the proper certificate which will entitle them to these rates. Those who have not sent their names are requested to do so at an early date. Yours truly, WM. B. ATKINSON.
Philadelphia, Feb. 20th, 1890.

International Medical Congress of 1890.—Special Notice.

All those who propose to attend the session of the International Medical Congress in Berlin next August are requested to forward to the undersigned their names and the number of tickets they will require. Arrangements are now in progress to obtain special rates on the lines to Europe. For the committee,

WM. B. ATKINSON, M.D.,
Permanent Sec'y Am. Med. Ass'n.

Instructions to Delegates.

Members of the Association who design to attend the annual meeting at Nashville, May 20, 1890, will be granted a reduction in their return railroad fare only, under the following conditions:

First.—Each person must purchase a first-class ticket (either unlimited or limited) through to the place of meeting, for which he will pay the regular tariff fare, and upon request the ticket agent will issue to him a certificate of such purchase (Form 2).

Second.—If through tickets cannot be procured at the starting point the person will purchase to the most convenient point where such through ticket can be obtained, and there repurchase through to the place of meeting, requesting a certificate properly filled out by the agent at the point where the repurchase is made.

Third.—The reduced rate for the return journey will only apply to points to which through tickets are on sale at the place of meeting, and at which through tickets to the place of meeting were purchased. If through tickets to the starting point can not be procured at the place of

meeting, the person will purchase to the most convenient point to which such through ticket can be obtained.

Fourth.—Tickets for the return journey will be sold by the ticket agents at the place of meeting, at one-third the highest limited fare, only to those holding certificates (Form 2), signed by the ticket agent at the point where the through ticket to the place of meeting was purchased and countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention.

Fifth.—It is absolutely necessary that a certificate be procured, as it indicates that the full fare has been paid for the going journey, and that the person is therefore entitled to the excursion fare returning. It will also determine the route via which the ticket for return journey should be sold, and without it no reduction will be made.

Sixth.—Tickets for return journey will be available for continuous passage only; no stop over privileges being allowed on tickets sold at less than full fare. Certificates will not be honored unless presented within three days after the date of adjournment of the convention.

Seventh.—Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described, by the secretary or clerk, on the certificate, which identification includes the statement that one hundred or more persons, who have purchased full fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting.

The certificates are not transferable, and the signature affixed at the starting point, compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer.

N. B. Please read carefully the above instructions, be particular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as the reduction on return will apply only to the point at which such through ticket was purchased.

American Medical Association.

The forty-first annual session will be held in Nashville, Tenn., on Tuesday, Wednesday, Thursday and Friday, May 20, 21, 22 and 23, commencing on Tuesday at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association as shall make application to the Treasurer and accompany said application with a certificate of good standing, signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the session of 1888:

"That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers."

Secretaries of Medical Societies as above designated are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send him annually a corrected list of the membership of their respective societies.

AMENDMENTS TO THE BY-LAWS.

Offered by Dr. A. L. Gihon, United States Navy.

That the first day of the meeting of this Association shall be on the first Wednesday of May or June respectively, instead of Tuesday.

By Dr. X. C. Scott, Ohio:

That the Committee on State Medicine be abolished, inasmuch as the Section on State Medicine occupies the entire ground.

ADDRESSES.

On General Medicine, by Dr. N. S. Davis, Chicago, Ill.

On General Surgery, by Dr. Samuel Logan, New Orleans, La.

On State Medicine, by Dr. Alfred L. Carroll, New York, N. Y.

Committee of Arrangements: Dr. William T. Briggs, Nashville, Tenn.

WILLIAM B. ATKINSON, Perm. Sec'y.

BOOK REVIEWS.

CLINICAL LECTURES ON VARICOSE VEINS OF THE LOWER EXTREMITIES. By WILLIAM H. BENNOTT, F.R.C.S., Surgeon to St. George's Hospital, etc. With Illustrations. London and New York: Longman, Green & Co. 1889. Chicago: A. C. McClurg & Co. Price $2.

These valuable clinical lectures, which in the main were published recently in *The Lancet*, represent the experiences of the author at St. George's Hospital between the years 1880 and 1888. The practical information contained in this little volume will be found of special value in the treat-

ment of varicose veins. It treats of the parts involved; of the probable causes; the complications which are to be found; the management of ordinary cases without operation, while the last lecture is devoted to the details of operative treatment both palliative and curative. While not claiming to be an exhaustive treatise upon varix, it nevertheless so fully considers the subject as to render it a very valuable manual in the hands of busy practitioners.

ESSAY ON MEDICAL PNEUMATOLOGY. A Physiological, Clinical and Therapeutic Investigation of the Gases. By J. N. DEMARQUAY, Surgeon to the Municipal Hospital, Paris, and of the Council of State, etc. Translated with Notes, Additions and Omissions, by SAMUEL S. WALLIAN, A.M., M.D., Ex-President Med. Ass'n. of Northern New York, etc. Pp. xv, 300. Net price, cloth $2, half russia, $3. Philadelphia and London: F. A. Davis. 1889.

This is an abridged translation of Demarquay's extensive treatise on the therapeutical application of the various gases, and contains an excellent account of the history, physiological action, preparation and administration of oxygen, together with a very brief note of the uses of nitrogen and hydrogen and a short review of the translator's own experience in the use of these gases. The work will form a useful addition to the somewhat meagre literature of the subject, particularly as regards the English language.

MISCELLANY.

LETTERS RECEIVED.

Dr. W. Frank Grinstead, London, Eng.; Dr. J. N. Dixon, Springfield, Ill.; The Illustrated Medical News Co., London, Eng.; Valentine's Meat Juice Works, Richmond, Va.; Kegan Paul, Trench, Trubner & Co., Ld., London, Eng.; Dr. R. A. Martin, Jr., Petersburg, Va.; Dr. H. W. Quirk, Cleveland, O.; Dr. David S. Booth, Belleville, Ill.; Dr. T. L. Wright, Bellefontaine, O.; Reed & Carnrick, New York; Dr. T. D. Crothers, Hartford, Conn.; National Folding & Enveloping Co., Chicago; Arch. Maxwell, Austin, Tex.; Myer Bros., St. Louis, Mo.; Woman's Medical College, Cincinnati, O.; F. C. Lewis, Catskill, N. Y.; W. P. Cleary, New York; Jefferson Medical College, Philadelphia; Fairchild Bros. & Foster, New York; Geo. Cheatham, Brooklyn, N. Y.; The American & Continental Sanitas Co., New York; Braidwood & Stahl, Keokuk, Ia.; Dr. J. H. Smith, Dallas, Tex.; Dr. C. Jane Vincent, Allegheny, Pa.; Jules Peelman & Cie., Paris, France; Dr. Geo. A. Zeller, Peoria, Ill.; Dr. G. C. Smith, Natick, Mass.; Dr. S. V. Ronsig, Roger's Park, Ill.; Dr. E. E. Russell, New York; R. L. Watkins, Prospect, O.; Dr. C. C. Leeper, Braymer, Mo.; Dr. Bane, Pittsburgh, Pa.; Dr. C. F. Stillman, Chicago; N. W. Ayer & Son, Philadelphia; Publishers Commercial Union, Chicago; Dr. T. S. Wescott, Philadelphia; Arkansas National Bank, Hot Springs, Ark.; Peacock Chemical Co., St. Louis, Mo., Dr. O. H. Hall, Iowa City, Mo.; Dr. E. K. Nash, Montrose, O.; Dr. D. Rankin, Allegheny, Pa.; Rio Chemical Co., St. Louis, Mo.; D. Ayers, Syracuse, N. Y.; Dr. J. A. Webb, Providence, R. I.; Dr. Kilpatrick, So. Omaha, Neb.; Farwell & Rhines, Watertown, N. Y.; Dr. A. Reeves Jackson, Chicago; E. S. Burnham, New York; W. F. Holloway. Cuyahoga Falls, O.; Dr. E. Flether Ingalls, Chicago; Dr. R. Harvey Reed, Mansfield, O.; Dr. Mary H. Thompson, Chicago; Dr. J. A. Hinton, Friendship, Tenn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 15, 1890, to February 28, 1890.

Capt. Samuel O. Robinson, Asst. Surgeon, now on duty at Ft. Hamilton, N. Y., is relieved from duty in the Div. of the Atlantic, and will report in person to the Superintendent, U. S. Military Academy, West Point, N. Y., for temporary duty at the Academy, to relieve Capt. Wm. L. Kneedler, Asst. Surgeon. Par. 4, S. O. 43, A. G. O., February 20, 1890.

Capt. William L. Kneedler, Asst. Surgeon U. S. A., upon being relieved from duty by Capt. Robinson, will report at Jackson Bks., La., for duty at that station, relieving First Lieut. Freeman V. Walker, Asst. Surgeon. Upon being relieved, Asst. Surgeon Walker will report at Ft. D. A. Russell, Wyo., for duty at that station. Par. 4, S. O. 43, A. G. O., February 20, 1890.

PROMOTIONS.

Lieut.-Col. Joseph R. Smith, Surgeon, to be Surgeon with rank of Colonel. February 9, 1890.

Major Dallas Bache, Surgeon, to be Surgeon with rank of Lieut.-Colonel. February 9, 1890.

Capt. Philip F. Harvey, Asst. Surgeon, to be Surgeon with rank of Major. February 9, 1890.

LEAVE OF ABSENCE.

Major J. H. Patzke, Surgeon, leave of absence for seven days granted in order No. 25, Ft. Huachuca, Ariz., February 12, 1890, to take effect the 14th inst., is extended twenty-three days. Par. 1, S. O. 18, Dept. Ariz., February 17, 1890.

Major Leonard Y. Loring, Surgeon, having been found incapacitated for active service by an Army retiring board, the extension of leave of absence on surgeon's certificate of disability granted him in S. O. 34, February 10, 1890, from this office, is, by direction of the Secretary of War, still further extended until further orders on account of disability. Par. 3, S. O. 46, A. G. O., Washington, February 25, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of: Major Charles Smart, Surgeon; Capt. Valery Howard, Asst. Surgeon; Capt. Louis Brechemin, Asst. Surgeon, is appointed to meet at Ft. Leavenworth, Kan., on March 15, 1890, or as soon thereafter as practicable, for the purpose of preparing a manual of drill and instruction for the members of the Hospital Corps, and to examine the equipment of the Corps with a view to its improvement. Par. 9, S. O. 47, A. G. O., Washington, February 26, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 1, 1890.

P. A. Surgeon C. W. Rush, ordered to the Navy Yard, New York.

P. A. Surgeon E. W. Auzal, ordered to the U. S. S. "Galena."

CORRIGENDUM.

On page 305, of the issue of March 1, line 13 from top of first column, the sentence commencing "Applications of a solution," etc., should read: "Applications of a solution of chloride of zinc to the affected *laryngeal* tissues and a correction of the deformed septum with a Bosworth saw soon yielded entire relief;" and should appear as a description of the treatment of Case 2.